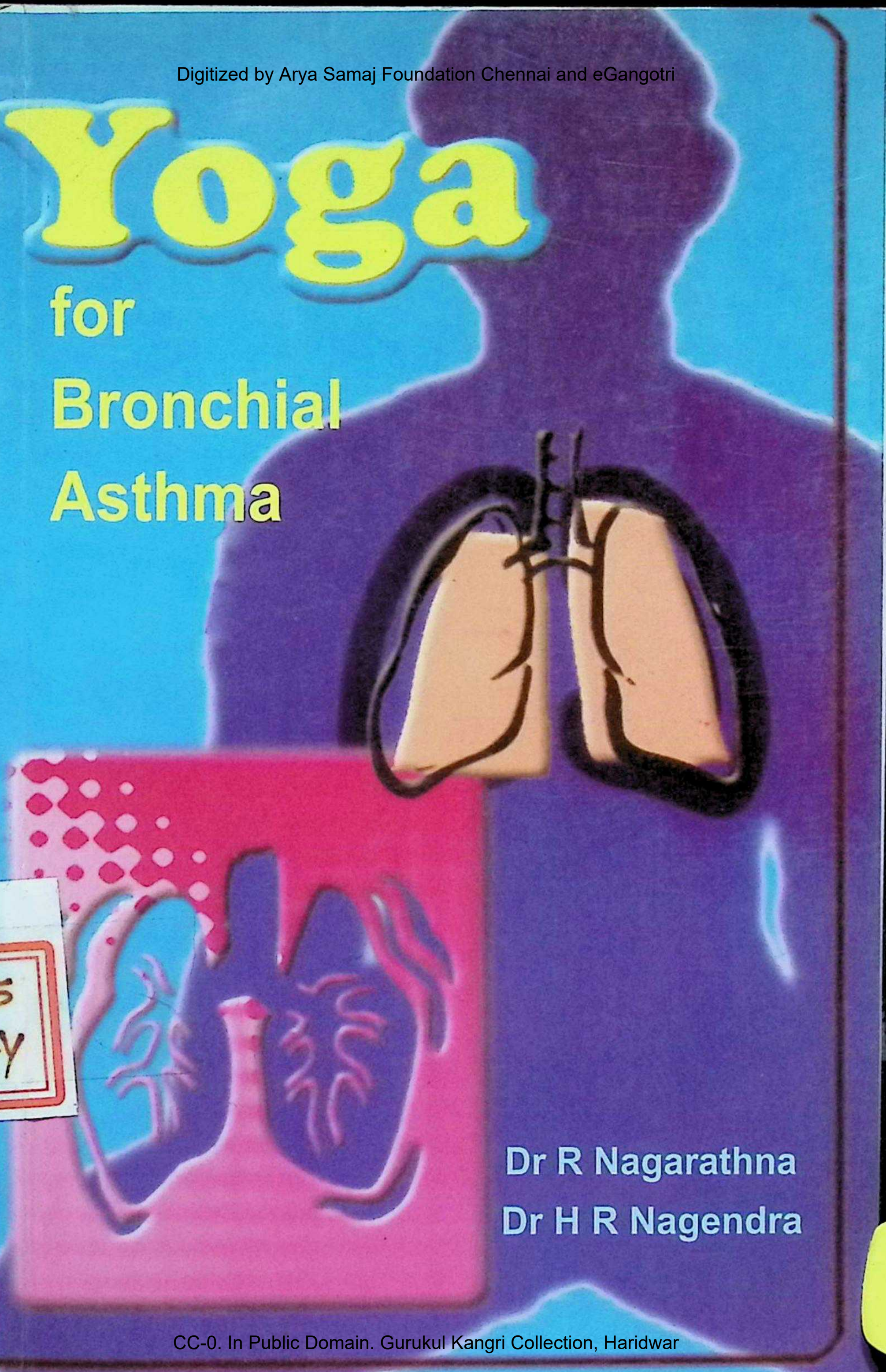
Yoga for Bronchial Asthma



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Dr R Nagarathna
Dr H R Nagendra

YOGA FOR ASTHMA

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YOGA
for
ASTHMA

Stock Verification-2024

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प्रज्ञानं ब्रह्म

Swami Vivekananda Yoga Prakashana
19, Eknath Bhavan, Gavipuram Circle
Kempegowda Nagar, Bangalore - 560 018

Yoga for Asthma: An introduction booklet of Yoga practices written by Dr R Nagarathna and Dr H R Nagendra Published by Swami Vivekanda Yoga Prakashana, #19, Eknath Bhavan, Gavipuram Circle, Bangalore - 560 019 and printed by Sharadh Enterprises, Bangalore - 560 008, pp 194 + 10, pb, 1/8 Demy.

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First Edition : **November 1998**
Reprint : **June 2012 1000 copies**
Reprint : **March 2017 1000 copies**
Price : **Rs. 120/-**

PUBLISHED BY :

SWAMY VIVEKANANDA YOGA PRAKASHANA
19, Eknath Bhavan, Gavipuram Circle,
Kempegowda Nagar, Bangalore - 560 019
Ph. : (080) 26612669, Telefax : (080) 26608645
web : **www.vyasa.org**

ISBN : 978-81-87313-10-6

PRINTED AT

SHARADH ENTERPRISES
#51, Car Street, Halasuru,
Bangalore - 560 008.
Ph : 98459 44311

PUBLISHER'S NOTE

This is the second and revised edition of the version "New Light for Asthmatics" first published in 1998. It is gratifying that all copies were sold out. The increasing awareness amongst both asthmatics and the clinicians has been possible.

Thanks to the beneficiaries who took steps to spread this message through word of mouth to large number of other sufferers and also co-operate in research projects, which gave a scientific stamp to whatever they were experiencing through yoga. We are glad that today integrated approach of yoga therapy is universally recognized by most asthma care givers as an acceptable component of management without any apprehensions. The title of the book has also been changed as "Yoga for Asthma" as yoga is no longer a new method and it has already established its efficacy and is in use for more than 15 years.

We sincerely thank the authors, printer and artist, for their co-operation that has resulted in this book.

Finally we thank all the readers of this book.

Publisher
February, 2004
Bangalore

PREFACE

Man has stepped into the third millenium. Medical men are working with many technologists to offer better health care. World health organisation is engaged in taking stock of global health status and taking necessary steps to raise the health standards.

Scientific aptitude that entered medical profession in the begining of 20th century made rapid strides in eradicating epidemics and pandemics, through invention of antibiotics and vaccines. Although nutritional deficiencies and infections continue to be the major problem in the under-developed and developing countries, the scenario in developed countries is totally different. Hi-tech medical facilities with fascinating advances in spare part surgeries, although has made life more comfortable, with a life expectancy of greater than a hundred years, the expected quality of life, with harmony and peace seems to be far from reality. Problems of stress, stress-related ailments, stundent unrest, breaking up families, are all on an exponential rise. The frustrated patients are moving towards alternative so-called non-scientific therapies.

Deep thinkers have raised questions as to why this way? What went wrong in our health delivery system? Why the mental and social health problems are on the increase? What should we do to prevent such problems? Can we raise the basic health level to greater heights as a preventive programme rather than do fire fighting after ailments have shown up? What are the markers of positive health? Is positive health a single state? what are the measures of positive health at the physical, mental, social and spiritual levels? What are the tools for achieving states of positive health?

Health professionals who started by giving relief to their suffering sick fellow beings, through medicines and surgeries, are now faced with such newer questions because of the need of the hour. Most of the common health and social problems cannot be solved through germ theories, antibiotics or surgeries. The advent of fascinating diagnostic tools has started pointing to the role of mind on matter. Biochemical, psycho-neuro-physiological, immunological researchers are all recognizing the role of mind, the lifestyle, suppressed emotions, stress etc. in the causation of many of these challenges of the millenium. Several research publications on the value of positive thinking, prayer, spiritual healing, mind-body medicine, yoga, acupunture, Qigong therapy, energy medicine are being poured into medical journals in spite of the resistance from hard-core matter-based pharmaceutical and surgery-oriented researchers.

Now in the turn of the millenium, health professionals are forced to accept the paradigm shift in our approach to understanding human health problems. Mental health is being studied in all its facets. A large research team is at work in WHO, during this year of mental health, to find out methods of promoting the mental, social and spiritual well-being of the human race at large.

Yoga, a science not less than 5000 years old has addressed a normal man to move towards higher states of harmony and peace both as an individual and also as a social being. Through years of introspection, practice and dialogue a huge knowledge base is available in this soil of spiritual seekers who meditated in the caves of Himālayas. The fund of knowledge that has been handed over to us by these keen researchers is gaining recognition by the health scientists as a valuable tool to raise the basic human consciousness towards a harmonious lifestyle of contentment and peaceful living.

S VYASA with scientific research as its base has used many of these techniques from the yoga lore and demonstrated its value in promotion of positive health in several areas.

Positive physical health in the form of improved muscle strength, stamina, dexterity, immune stability have been achieved after the integrated approach of yoga for Positive physical health.

Improved perceptual sharpness, intelligence, memory, emotional stability that are indicators of positive mental health have been achieved after yoga pracitces.

Use of yoga in rehabilitation of socially sick persons from remand homes, prisons etc. has been achieved. The crime rate reduced in many cities of USA when one percent of the population practised Transcendental Meditation. Prevention of many of the stress-related health problems are possible through yoga practices. Large number of general public, professionals, executives etc, are drawn towards these PPH programmes not only to prevent the dreaded diseases like heart attacks and cancers, but also to promote their own family harmony and peace.

This booklet takes you through a glimpse of the huge knowledge base from which relevent concepts, and practices have been culled out to make it practicable for common, working busy person of today.

We are indebted to Mrs Devi Guha Chowdhri and Mr Chowdhri for their contribution in compilation of this book. We thank Dr Shirley Telles for her contribution to the scientific knowledge. We thank Dr Sudha Rani, Sri Agarwal M, Sri Amrit Ram, Sri Natesh and many other Yoga Therapists for their help in preparing and publishing this booklet.

R Nagarathna
H R Nagendra

CONTENTS

Page No.

1. **Introduction** 1-4

What is Asthma?

What is Nasal Allergy?

What is Nasal Allergy?

How common is asthma and Nasal allergy?

Why is asthma increasing?

2. **Anatomy and Physiology of Respiratory System** 5-18

Introduction

Anatomical Features

Mechanics of Breathing

Lung Function Tests

Control of breathing

3. **Causes of Asthma & Nasal Allergy** 19-34

How does the narrowing of bronchial airways occur?

What is the cause of Asthma?

What is the role of immune system in asthma?

What is the role of nervous system in asthma?

What triggers asthma attack?

How does stress lead to asthmatic attack?

4. **Management of Asthma** 35 - 54

What are the preventive measures?

Drug Therapy

5. **Health and Disease - A Yogic Prospective** 55 - 72

Concept of Health & Yoga

Uuderstanding Yoga

Definition of Yoga

The five Sheaths of Existence

The Science of Illness

6. **Breathing Practices**

Standing

Hands In and Out Breathing 79
Hands Stretch Breathing 80
Ankles Stress Breathing 82
Sitting 83
Dog Breathing 84
Rabbit Breathing 85
Tiger Breathing 85
Śaśāṅkāsana Breathing 87

Supine

Straight Leg Raise Breathing 88
Instant Relaxation Technique (I.R.T.) 89

Śithilīkaraṇa Vyāyāma (Loosening Yourself)

Forward and Backward bending 90
Side bending 91
Pavanamuktāsana Kriyā 92
Quick Relaxation Technique (Q.R.T.) 96
Sūryanamaskāra 98

7. **Yogāsanas**

Standing Postures

Ardhakaṭi Cakrāsana 108
Ardha Cakrāsana 109
Pāda Hastāsana 110

Sitting Postures

Vajrāsana 111
Vakrāsana 112
Ardha Matsyendrāsana 113
Paścimottānāsana 114

Prone Postures

Bhujaṅgāsan 115
Śalabhāsana 116

Supine Posture

Sarvāṅgāsana 117
Matsyāsana 118
Halāsana 120
D R T (Deep Relaxation Technique) 122

8. Prāṇāyāma

Sūrya Anuloma Viloma Prāṇāyāma 130
Candra Anuloma Viloma Prāṇāyāma 131
Nāḍiśuddhi Prāṇāyāma 132
Cooling Prāṇāyāma 134
Bhrāmarī Prāṇāyāma 136

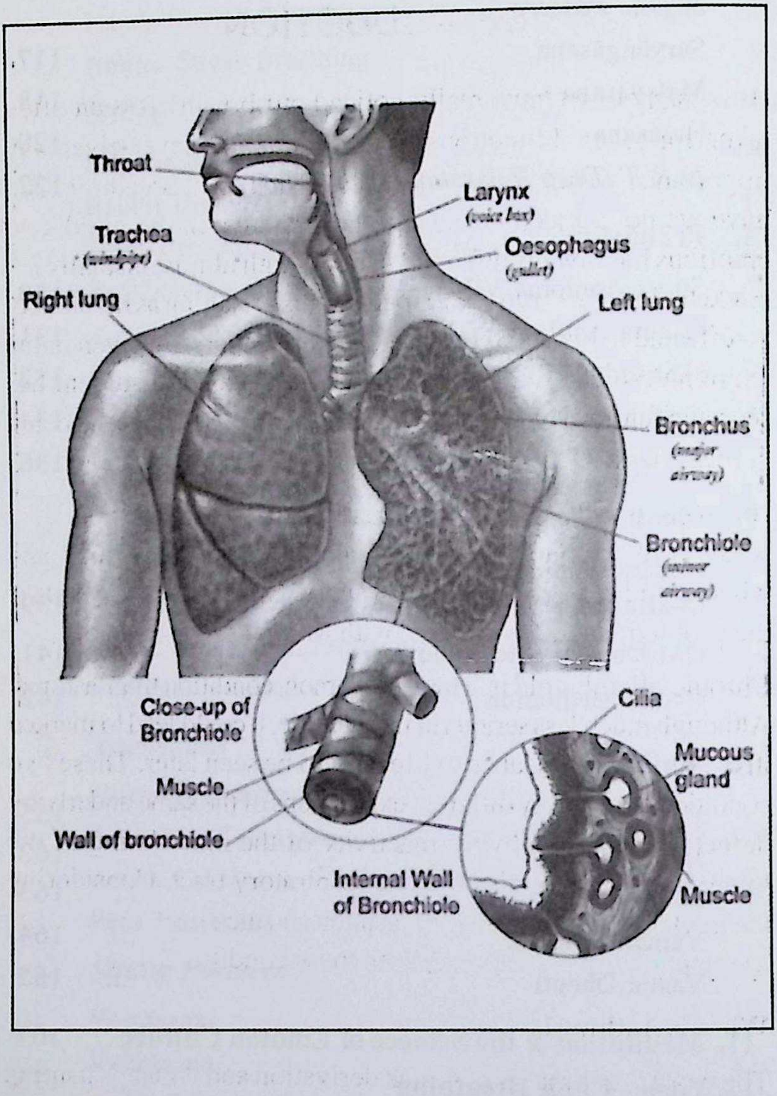
9. Meditation

Nādānusandhāna
(A-kāra, U-kāra, M-kāra, A-U-M) 139
OM-Dhyāna (Meditation) 141
Cyclic Meditation 142

10. Kriyās

Trāṭaka 155
Jala Neti 162
Sūtra Neti 163
Vamana Dhouti 164
Vastra Dhouti 165
11. Meditation & the Scinece of Emoton Culture... 167
12. Yoga - Chair Breathing 175
13. Research on Yoga for Asthma - a review 181

References


Throat
Larynx
(voice box)
Trachea
(windpipe)
Oesophagus
(gullet)
Right lung
Left lung
Bronchus
(major airway)
Bronchiole
(minor airway)
Close-up of Bronchiole
Cilia
Mucous gland
Muscle
Wall of bronchiole
Internal Wall of Bronchiole
Muscle

1

INTRODUCTION

How many of us have really noticed our breath? It is an often taken for granted function of our system and never given any importance till such time one feels difficulty in breathing. But have we not noticed always that any change in the mind and emotions has always reflected in our breath almost instantly? A cricketer in his 99th run has to focus on his breathing as his anxiety is reflected in his breath. As the question papers are given in the examination hall, there is a sigh till such time the student has seen and felt comfortable with the questions. Just before the being comes into this world the mother needs to work on her breath.

But what happens when this breath is not just as simple as it sounds? What happens when one has to pull and push and wheeze and struggle to take one single, simple breath? This is the problem that goes on & on with asthmatics.

Chronic allergic cold is a more common condition than asthma. Although much less serious in its outcome, it could lead to marked discomfort and nuisance to life, as will be seen later. These two conditions are simply different expressions of the same underlying defect, namely, the hyper-reactivity of the inner lining of the lower and upper portions of the respiratory tract. Considering the marked similarity in their causation and their response to yogic treatment, we have included both these conditions here.

What is Asthma?

The word "Asthma" is of Greek derivation and it means panting or gasping. Not all difficulty in breathing is asthma. The prefix bronchial refers to the fact that the basic problem is in the bronchi, the lower air conduits within the lungs. With the growing knowledge about asthma, this condition is clearly defined and differentiated from other illnesses with breathlessness. Some common features of asthma are -

1. Episodes of breathlessness which changes in severity spontaneously or with treatment,
2. Wheeze (whistling noise) while breathing out and demonstrable variation in obstruction to air flow through the airways of the lungs.

Bronchial asthma is characterized by recurrent attacks of difficulty in exhalation due to wide-spread reversible narrowing of airways in the lungs, which varies in severity over a short period of time either spontaneously or as a result of treatment. Remarkable hyper-reactivity of the air passages and excessive response by narrowing to various kinds of stimuli, is characteristic of asthma. The condition is not due to any known specific infection. This is a disease characterized by airway inflammation and bronchial hyper responsiveness.

So asthma is not one disease: it covers a multitude of different patterns. Like the word 'cancer' it tells you roughly what sort of condition we are dealing with, what ballpark we are in. Under that general heading you will find a range of severities, a range of triggering factors and a range of outcomes. It logically follows that what is good for one asthmatic person may be unsuitable for another.

Asthma is a very individual condition and management needs to be personal because of the variety of factors that underlie each individual's asthma.

What is Nasal Allergy?

Hay fever and allergic rhinitis are the other names for nasal allergy (NA). The three cardinal symptoms of this condition are sneezing, running nose (rhinorrhoea) and blocked or stuffy nose. This may occur seasonally as in Hay fever or perennially almost all year round. There may also be itching of nose, ears, eyes, throat and post-nasal discharge. At times, the inner lining (mucous membrane) of the paranasal sinuses may get involved in this allergic inflammation leading to pain and discomfort in the forehead and cheeks. Occasionally this may form the base for acute or chronic infection leading to sinusitis. Although not a fatal condition, it could lead to much discomfort, loss of interest at work and psychological depression.

Exposure to cold wind, sunlight, dust and fumes, etc. may precipitate the onset of the symptoms. Exactly like in bronchial asthma hyper-reactivity of the inner lining of the nose is the cause of this problem.

How common is asthma and Nasal allergy?

Prevalence of asthma varies considerably within countries and greatly between countries. More common in developed countries than developing countries, reasons for which are ill defined. Nearly 5-10% of population have asthma. In India it is about 6% varying from 2-17% in different sections of the society. It can start at any age varying from 2-17% in different sections of the society. It can start at any age but in majority it starts before the age of 10 yrs. Twice as common amongest boys than girls; male, female ratio is equal in adults.

It is almost unheard of in Eskimos and black Africans living in rural areas, whereas in the Western Caroline Islands nearly 50 percent of the inhabitants have asthma, with three quarters of children being affected.

Between these extremes are the westernized populations such as people in the UK and other European countries, Australia and New Zealand, which all have roughly the same percent of asthma. Interestingly, those parts of the world with less asthma are those that are less encouraging to the survival of the house dust mite.

Why is asthma increasing?

It is possible that some of the increase is due to doctors now using the word 'asthma' whereas before they would have used 'wheezy bronchitis', but this cannot explain the greater part of the rise. Exposure to allergens in the houses, viral infections, aspects of the indoor environment such as central heating, air pollution, the stress of modern living - even the treatments used for asthma itself - have all been blamed for the increase. How ever, evidence for any of these individually being responsible is limited. In fact, it is highly likely that the rise is due to a combination of these factors although allergies are likely to be the more important cause.

Reminiscences of a Partcipant

Asthma is an inheritance to me from my dear father who suffered from this disease for considerable period. It was also harassing me from my 20th year, for nearly seven years. In November 1983, I joined Yoga classes at Vivekananda Kendra; What a transformation Yoga has brought in me First, I got rid of this pestilence. Second this cure has in turn made me more optimistic in life. Now feeling of well-being and cheer is ever-prevalent as compared to the constant despair earlier. Having been cured of Asthma naturally, I want to pass on this happy news to others who are also suffering from this ailment. Constant practice of Yoga all its aspects as taught by Vivekananda Kendra can help and I want everyone to take advantage of this simple but very effective remedy. I offer my share by taking yoga classes organised by Kendra.

Smt-Meera Bhojraj
Age 30 years

2

ANATOMY AND PHYSIOLOGY OF RESPIRATORY SYSTEM

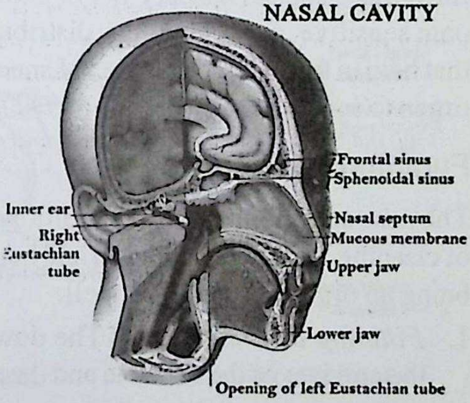
Introduction

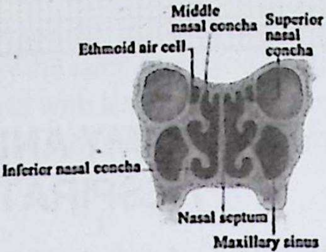
It is by means of breathing that every cell in the body receives its supply of oxygen, and at the same time gets rid of the products of oxidation. Oxygen, combining with the carbon and hydrogen of the tissues, enables the metabolic process of each individual cell to proceed, with the result that work is affected and waste products in the form of carbon-dioxide (CO_2) and water (H_20) are eliminated. Respiration is a two-fold process whereby the interchange of gases takes place in the tissues called 'internal respiration' and in the lungs known as 'external respiration'. Air is drawn into the lungs during inspiratoin and expelled from the lungs during expiration. The air enters through the respiratory passages which are enumerated and briefly described below.

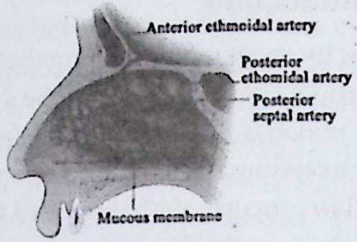
Anatomical Features

NOSE: The nose is divided into two nostrils by a nasal septum. The division is normally unequal. Both the septum and the side walls of the nose are made up of cartilages in their lower parts and by thin flat bones in their upper parts. Three strips of bones project from

NASAL CAVITY


Frontal sinus
Sphenoidal sinus
Inner ear
Right Eustachian tube
Nasal septum
Mucous membrane
Upper jaw
Lower jaw
Opening of left Eustachian tube


Middle nasal concha
Superior nasal concha
Ethmoid air cell
Inferior nasal concha
Nasal septum
Maxillary sinus


Anterior ethmoidal artery
Posterior ethomidal artery
Posterior septal artery
Mucous membrane

the bony side wall of the nose called Turbinate bones to form the Nasal Conchae.

The external opening of the nose (anterior nares) opens into the Vestibule of the nose. The inner lining of vestibule continues with the skin of the anterior nares. This contains a number of coarse hairs which project downwards. The nasal cavities are lined with highly vascular mucous membrane that continues with that of the throat and with that of the para-nasal sinuses. This lining consists of a single layer of cells containing small delicate hair like projections (cilia). There are a large number of mucous secreting cells scattered along the nasal mucosa that secrete a thin transparent fluid to keep the surface moist and sticky.

The filaments of the olfactory nerve arise from small receptors scattered in the mucous membrane of the nasal cavity in its upper part. These are the points that pick up the sense of smell. Apart from these special sensory nerve endings there are touch and pain sensitive nerve endings distributed in the nasal lining that help in the protective reflex of sneezing apart from being an organ to sense the smell.

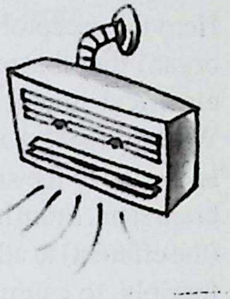
Functions of Nose

The nose acts like a room air conditioner with 3 major functions of cleaning, temperature control and humidity control, apart from being an organ to sense the smell.

1. *Filtering the inhaled air*: The downward projecting hairs, the crevices of the conchae and the sticky mucus on the wide

mucous membrane surface renders the air free of big and small pollutants.

2. *Warming of the air* : Air as it passes up the irregular nasal passage (enough time is provided for temperature control due to the length of the passage) gets warmed up to body temperature by exchange of heat across the wide mucosal surface area.

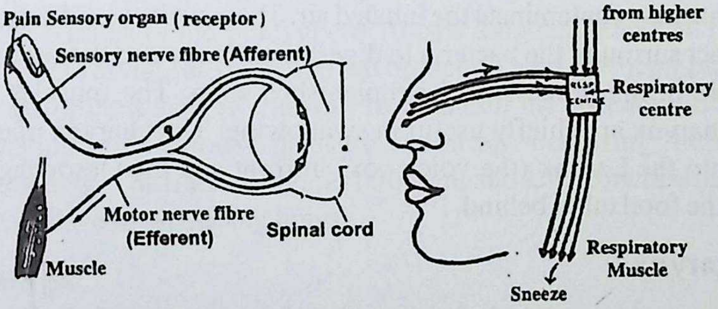


3. *Humidifying* : The evaporation of the moisture from the extensive surface of the nasal mucosa humidifies the inhaled air.
4 *Sense of smell*: This is perceived by end organs in the nasal lining and the electrical activity is passed on through the olfactory nerves.

Sneezing Reflex

This is a protective reflex to expel and thus prevent irritating substances in the air from reaching the lungs.

A reflex arc consists of sensory receptors that receive the information, the afferent nerve (upstream nerve) that carries the information to the centre, the efferent path (downstream nerve)


Pain Sensory organ (receptor)
Sensory nerve fibre (Afferent)
Motor nerve fibre (Efferent)
Spinal cord
Muscle
from higher centres
RESP. CENTRE
Respiratory centre
Respiratory Muscle
Sneeze

A MUSCLE REFLEX ARC SNEEZING REFLEX ARC

that carries the information from the centre to the effector organ that carries out the effect.

Here the receptor is the touch sensitive nerve endings (sense organ) distributed in the nasal lining that sends an array of electrical impulses along the sensory nerve (the afferent). Whenever the inhaled air contains strong irritants, the information is carried to the sneezing centre, a group of nerve cells, in the brain stem. From here the message is sent along the motor nerves (the efferent) to all the chest muscles (effector organ) to contract forcibly, to cause a big inhalation followed by a forcible co-ordinated contraction of all respiratory muscles, to blast out the irritant from the nose and mouth by a burst of exhalation.

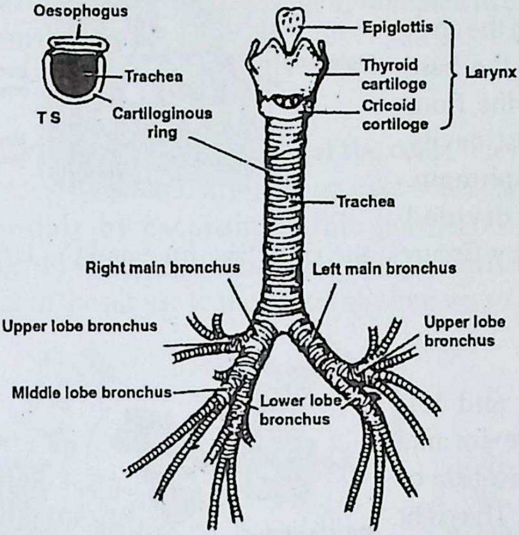
Thus we find that sneezing is an important and necessary protective reflex. The sneezing becomes a problem in persons with nasal allergy whenever this reflex is overdone due to hypersensitivity of the nasal lining, triggering off the loop even for very small non-dangerous irritations.

Pharynx

This is a common muscular tube (throat) that lies behind the nose and the mouth. The pharynx is guarded by tonsils at the sides, and adenoids at the top. Tonsils and adenoids are collections of white blood cells (lymphatic tissue) which act as defence army-guards by fighting away any dangerous germs that may contaminate the inhaled air. These white blood cells in fact surround the bacteria to digest them away and themselves die in the process, to be replenished soon. The muscles of pharynx are chiefly useful in swallowing. The pharynx opens into the Larynx (the voice box) in front and the Oesophagus (the food tube) behind.

Larynx

Larynx is composed of pieces of cartilages to maintain its shape and the patency. Attached on top is a small piece of cartilage called Epiglottis that closes the Larynx like a lid during swallowing so that the food glides over it into the food canal (Oesophagus) and not into the wind pipe (trachea).


Oesophogus
Trachea
T S
Cartilloginous ring
Epiglottis
Thyroid cartiloge
Cricoid cortiloge
Larynx
Trachea
Right main bronchus
Left main bronchus
Upper lobe bronchus
Upper lobe bronchus
Middle lobe bronchus
Lower lobe bronchus

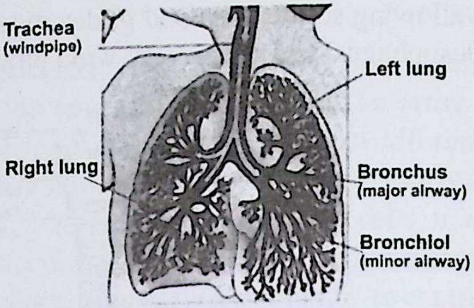
The Vocal Cords are thin flaps that project from the side wall of the larynx. The movement of these flaps are controlled by highly efficient groups of delicate laryngeal muscles. The vibration of these cords due to the air passing through the glottis causes voice production.

Trachea

The Trachea (wind pipe) about 10 cms long extends from the larynx to divide into right and left bronchi. There are incomplete rings of cartilages in the wall to maintain the patency under varying intra-thoracic pressure conditions occurring during breathing. The trachea divides into right and left bronchi which enter the corresponding lungs.

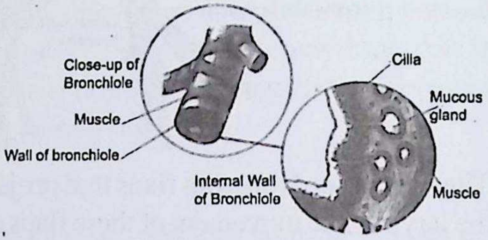
Lungs

The lungs, two in number, are the principal organs of respiration. They fill the chest cavity, one on each side separated in the middle by the heart, its blood vessels and other structures. The lungs are cone shaped with the apex above and the base resting on the floor of the chest cavity on the diaphragm. They are divided into lobes by fissures; the right has three and the left has two lobes.


Trachea
(windpipe)
Left lung
Right lung
Bronchus
(major airway)
Bronchiol
(minor airway)

Bronchi

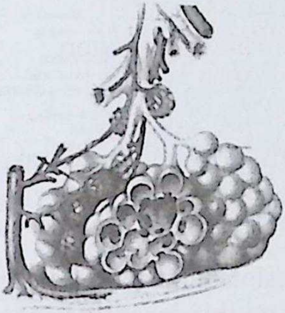
The right and left bronchi are formed by the bifurcation of the trachea. The right bronchus is shorter and divides into three branches to enter three lobes of the right lung and the left is longer and divides into two branches to enter the two lobes of the left lung. These further divide and redivide into a number of bronchi like the branches of a tree to ramify into smaller bronchi and finally end as bronchioles that enter the air sacs called alveoli.

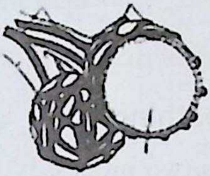

Close-up of
Bronchiole
Muscle
Wall of bronchiole
Internal Wall
of Bronchiole
Cilia
Mucous
gland
Muscle

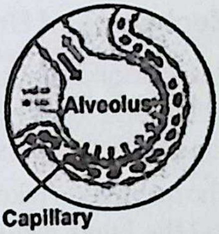
The larger bronchi have incomplete rings of cartilage in their wall and they disappear in smaller bronchi. The inner lining of the bronchus (mucous membrane) has ciliated (hairy) layer of cells, the movement of the cilia being upwards to remove the finer pollutants that would have escaped the nose. The inner lining also contains mucus secreting cells that secrete thin mucus that provides the lubricating layer of moisture and also helps to humidify the air. The most important in the bronchus is the thin circular layer of smooth muscles that run all the way along the bronchial tree. The contraction of this thin circular bronchial muscle leads to narrowing and its relaxation to dilatation of the air passages. The calibre of the bronchus varies with several factors and this is controlled by a highly complex neuro-chemical mechanism described later.

Alveoli

Alveolus is lined by a single layer of flat cells. It is here that the blood comes into almost direct contact with the air, being separated only by exceedingly thin permeable membrane consisting of two layers of flat cells. Oxygen diffuses from the inhaled air in the air sac to the blood moving very slowly in the capillaries and carbon-dioxide moves from the blood to the air sac due to the differences in partial pressure of the two gases. Carbon-dioxide moves more readily than oxygen. Pulmonary artery and veins carry de-oxygenated and oxygenated blood from and to the heart respectively. Bronchial arteries supply nourishment to the lungs.The compositions of inhaled and exhaled air are given below:

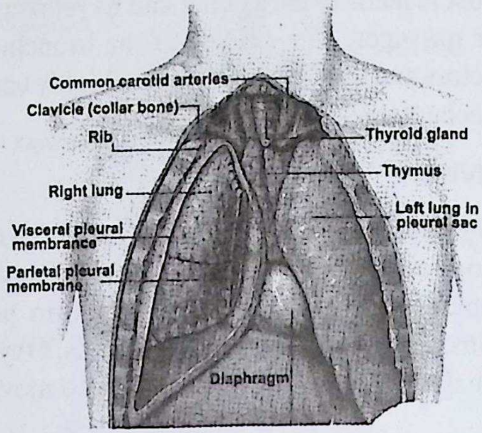






	Inspiration Air	Exhaled Air
Nitrogen	79%	79%
Oxygen	20%	16%
Carbon-dioxide	0.04%	4.04%
Miscellaneous	0.96%	0.96%

Pleura


Common carotid arteries
Clavicle (collar bone)
Rib
Thyroid gland
Thymus
Right lung
Left lung in pleural sac
Visceral pleural membrance
Parietal pleural membrane
Diaphragm

Each lung is surrounded by a double layer of membrane called Pleura. The inner layer of Pleura closely surrounds the lung and the outer layer covers the interior of the chest wall. Between the Pleural layers there is a thin layer of lubricating fluid to prevent friction.

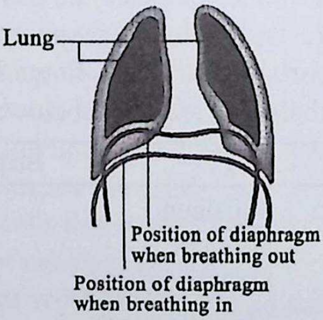
Mechanics of Breathing

Respiration involves two processes. The inspiration (Pūraka) which is active and exhalation (Recaka) which under normal conditions is a passive phenomenon.

The inspiration takes place by the expansion of the thoracic cage and the lungs passively expand to fill up this increased space when the air is drawn into the air passages. Three sets of muscles are involved in inspiration:

i. *Diaphragm* is a dome-shaped sheet of muscle in the floor of the chest. Contraction of the diaphragm enlarges the chest cavity vertically from above downwards.

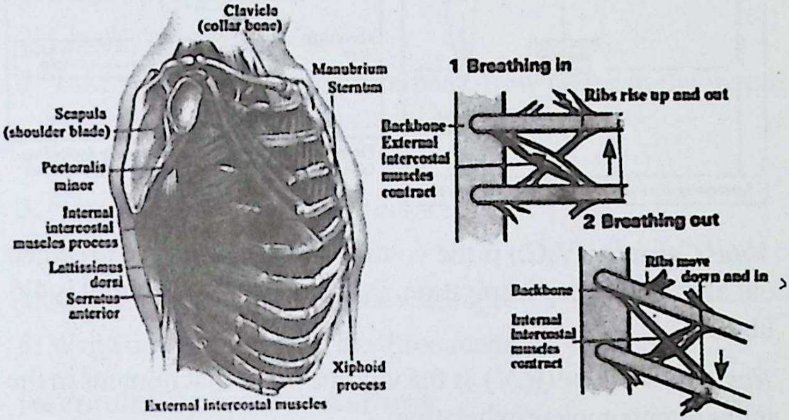
ii. *Abdominal muscles also assist during forced respiration* Expiration takes place as the chest wall falls back during relaxation of


Lung
Position of diaphragm when breathing out
Position of diaphragm when breathing in

these muscles when the intra-thoracic volume decreases and the air is forced out of the lungs through the air passages.

iii. *Intercostal muscles* are two layered of oblique strips of muscles in between the ribs. Contraction of this muscle causes elevation of the ribs to expand the chest in the forward and outward direction.

THORACIC BREATHING

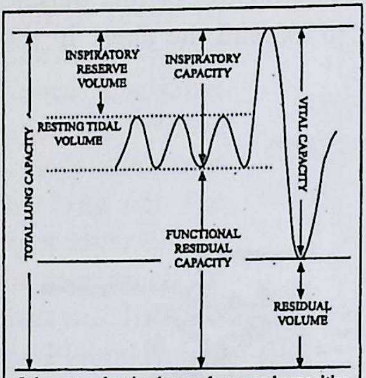

Clavicle
(collar bone)
Manubrium
Sternum
Scapula
(shoulder blade)
Pectoralis
minor
Internal
intercostal
muscles process
Lattissimus
dorsi
Serratus
anterior
Xiphoid
process
External intercostal muscles
1 Breathing in
Ribs rise up and out
Backbone
External
intercostal
muscles
contract
2 Breathing out
Ribs move
down and in
Backbone
Internal
intercostal
muscles
contract

iv. *Clavicular Muscles* are neck muscles attached to the clavicle below and the jaw bone above. Contraction of these muscles along with shoulder girdle muscles help to pull up the sternum and clavicle to expand the chest in upward direction. These muscles are used only in deep forced breathing.

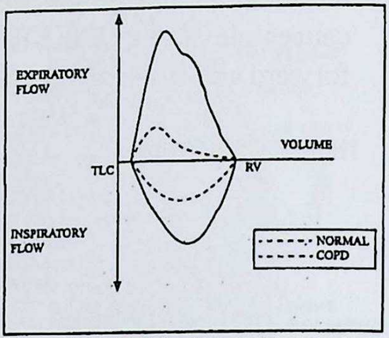
Lung function tests

The lung volumes are measured by an instrument called Spirometer. The person blows through its mouth piece into the instrument. This air rotates a drum and a needle attached to it, marks the volume on a paper. Alternatively, the air expands the bellows which make the needle attached to it mark the same on a graph, which is digitized to show the loop of breathing on the computer screen.

Total Lung Capacity (T.L.C.) is from 4.5 to 5 litres of air. Tidal air is the amount of air that is breathed out in one breath at rest and this is about 0.5 litre.


INSPIRATORY RESERVE VOLUME
INSPIRATORY CAPACITY
RESTING TIDAL VOLUME
TOTAL LUNG CAPACITY
VITAL CAPACITY
FUNCTIONAL RESIDUAL CAPACITY
RESIDUAL VOLUME

Spirometry showing lung volumes and capacities



Flow-volume loop: Time in seconds is depited on 'X' axis and volume in liters on 'Y' axis

Vital Capacity (V.C.) is the volume of air that can be breathed out after a full deep inspiration. In normal healthy adult it is 4-5 litres.

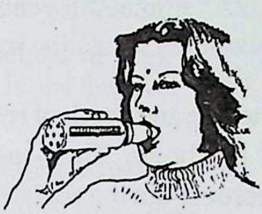
Residual Volume (R.V) is the volume of air that remains in the lungs after complete exhalation.

Forced Vital Capacity (F.V.C.) is measured by blowing forcibly and completely after a maximum deep inspiration.

Slow Vital Capacity (SVC) is recorded as the person blows slowly and completely after a deep inspiration. In normal healthy persons FVC and SVC are same. In asthmatics, FVC is less than SVC.

Forced Expiratory Volume in first second (FEV_1) is noted by marking off the volume that is exhaled in the first second on the FVC curve. Normally FEV_1/ FVC is more than 80% in normal persons. This ratio is reduced in asthmatics due to narrowing of air passages and improves completely after a bronchodilator.

Peak Flow Rate (PFR) is measured by using a small portable (mini PFR meter) instrument. Here the person blows into the



mouth-piece forcibly in a single blast after a deep inspiration. Several studies have shown that PFR correlates with FEV_1/FVC ratio and hence is a good and easy indicator of the level of broncho-constriction.

How to use a Peak flow meter?

1. Stand up, if possible.
2. Check cursor is on Zero.
3. Take a deep breath in, place peak-flow meter in the mouth (hold horizontally) and close lips.
4. Blow suddenly and hard.
5. Note number indicated by cursor.
6. Return cursor to zero.
7. Repeat twice to obtain three readings.
8. Write down the best of the three readings.

Reversibility test for Asthma

Sometimes these breathing tests are performed before and after inhalation of a bronchodilator drug, which opens the airways. If the readings increase by 15 per cent or more after inhaling the drug, the airway narrowing is said to be reversible and confirms a diagnosis of asthma. Even asthmatic patients do not always show reversibility on every occasion tested, but it is nevertheless a very useful diagnostic test in patients in whom asthma is suspected.

Control of breathing

Normal rate of respiration is slightly quicker in women than in men. Normal rates per minute are given below:

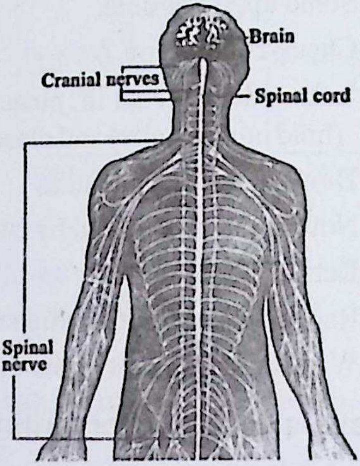
i.	In newborn babies	40 *per min*
ii.	At one year	30 *per min*

iii.	2-5 years	24 *per min*
iv.	In adults	10-20 *per min*

The rate and depth of respiration varies with the oxygen demands of the body. They increase with exercise and emotion and decrease during rest.

The respiration is regulated and controlled by two principal factors:

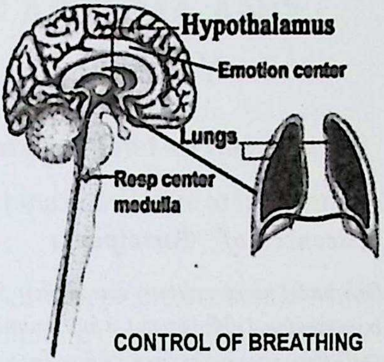
(a) *Nervous Control:* The respiratory centre is a group of nerve cells situated in the medulla oblongata (lower part of the brain stem). This maintains the basic reflex rhythm of respiration through nerves that pass up and down the spinal cord to the muscles of respiration.



(b) *Chemical Control:* The respiratory centre can be influenced by certain chemical changes in the blood. Excess carbon-dioxide (excess acidity) and reduced oxygen in the blood stimulates this centre to cause an increased rate and depth of breathing and *vice versa.*

The rhythmic discharges of this lower centre for respiration in the medulla is under control of influences from higher centres. One such higher control is exerted by the hypothalamus, the seat of autonomic nervous system. Nervous connections exist between these two centres. Excitatory impulses with any emotional upsurge pass down from the hypothalamus to increase the rate and depth of breathing.

A second set of nervous connections exist between the frontal cortex and the medullary centre because of which the respiration can be easily altered voluntarily. This is the highest level of nervous control.



CONTROL OF BREATHING

Thus we find that there is a hierarchy in the nervous control systems working in harmony without disturbing the basic involuntary rhythm at rest. The higher controls are to help alter the rate and depth of breathing to meet the oxygen demands of the body.

Respiration is a function in the body which has both involuntary and voluntary nervous controls. Respiratory system forms the threshold between totally involuntary functions like the functions of heart, intestines, etc., and voluntary functions such as those of skeletal muscles (e.g. limb movements).

Reminiscences of Partcipants

1. Asthma and I were constant companions for about five years. It was not of my own making. I didnot want it but it wouldnot leave me and enjoyed harassing me. Only those who suffer from Asthma know what it means. Every problem must have a solution somewhere, sometime, but the problem itself was to find it. I was lucky that I found it at Vivekananda Kendra through their Yoga Therapy. After undergoing Yoga training, which I continue to practice even now regularly, I have been able to get rid of the medicines. Once or twice a year, I may get wheezing which I manage with simple breathing practices if not yoga chair breathing. I wish I had known and practiced Yoga earlier instead of suffering for a long period. What I learnt was not merely a physical relaxation but also a method of calming the mind too, in that, this method changes our outlook itself. Unknown fear and doubts have gone and I can now face problems surely I do strongly recommend to all my sisters to take to Yoga to get over their problems. Simple but sure-fire remedy is this. I have experienced it. You can also. Why not try?

Miss. C. Sunita
Age -16 years

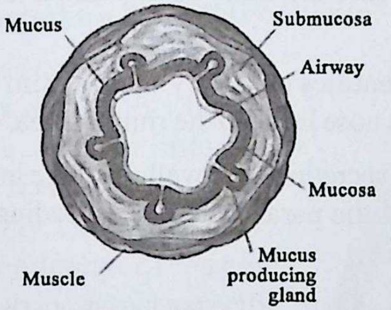
3

CAUSE OF ASTHMA AND NASAL ALLERGY

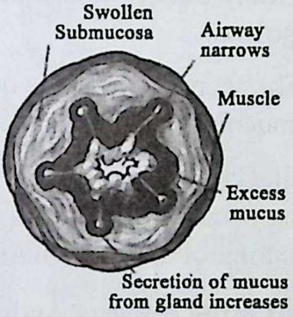
How does the narrowing of bronchial airways occur?

The airway narrowing in asthma occurs due to inflammation of the inner lining, resulting in :

1. Swelling of the the inner lining of the bronchus which gets engorged, swollen, contributing partly to the reduction in the airway narrowing.


Mucus
Submucosa
Airway
Mucosa
Mucus producing gland
Muscle

NORMAL AIRWAY


Swollen Submucosa
Airway narrows
Muscle
Excess mucus
Secretion of mucus from gland increases

AIRWAY DURING ASTHMA ATTACK

2. Secretions are poured out from the swollen mucosa into the bronchi, further decreasing the effective lumen. Characteristically the secretion in asthma is sticky and is expectorated with great difficulty towards the end of an attack.
3. Broncho-constriction or contraction of the bronchial muscles, lessening the calibre of the bronchus. Tightening of circular strip of muscle that surrounds the bronchus is irritated to cause this narrowing.

What are the changes in the nose that cause the symptoms in Nasal allergy?

As we have seen, nasal allergy is only a younger sister of bronchial asthma, the causative factor in both cases being almost the same, the changes observed being very similar.

1. The irritation of the nerve endings within the nose leads to continuous bouts of sneezing which is one of the symptoms (This sneezing reflex corresponds to the broncho-spasm and cough).
2. Swelling of the inner lining of the nose contributes to the nasal stiffiness. This swelling leads to distressful feeling of blocking as the nasal air passage is already very irregular. Sometimes chronic irritation and swelling can lead to longterm thickening and hypertrophy of the mucosa causing fleshy masses to project into the nasal cavity called nasal polyps.
3. The secretion of large quantities of watery mucus from the mucous membrane of the nose leads to the rhinorrhoea.

Similar changes of excessive secretion and swelling of the inner lining occurs in the lining of the paranasal sinuses leading to symptoms of allergic senusitis.

What is the cause of Asthma?

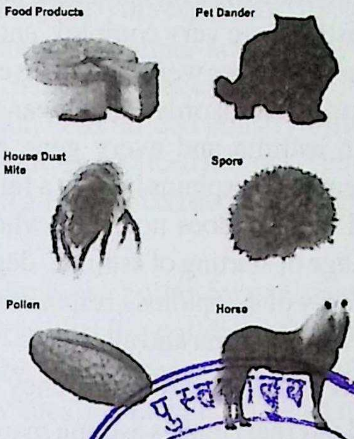
Unfortunately, medical researchers do not know exactly what causes asthma. It is entirely possible that no single cause will ever be found. Inflammation causes mucus to build up in the airway, cutting down on the space available to move air. Inflammation also stimulates the muscles around these tubes to contract (broncho-construction), narrowing the tubes and further cutting down the airflow. Although inflammation is the root cause of all asthma, the trigger for this inflammation is different for different people. Understanding how inflammation causes asthma brings us one step closer to controlling this disease.

181.45
NAG-Y

A lot of things are able to provoke asthma inflammation. These vary from person to person. The most common ones are:

a. *Allergens*(organic substances that cause allergic reactions) : house dustmites, pollens (grass, trees.), molds, pet dander, and cockroaches.

b. *Tobacco* : Non-specific irritants and pollutants in the air, strong fumes or odors like household sprays, paints, gasoline, perfumes etc.,



पुस्तकालय
166047
गुरुकुल कांगड़ी विश्वविद्यालय

Is Asthma a hereditary disease?

It has been observed that persons with asthma have a family history of hay fever, asthma or skin allergy. One inherits only a tendency of hyper-reactivity and not a specific allergic disease. One is born with a tendency to react hypersensitively and manifests the condition earlier and more severely than normal persons if exposed to one or more of the triggering factors. Some recent studies in the large population has shown an increased tendency of airway responsiveness to broncho-constrictive substances in asthmatics compared to normals. This shows that asthmatic subjects represent the most sensitive extreme of the population and are not a separate sick population as such.

Genetics

The probability of having asthma increases if one parent has got asthma and even higher if both parents have it. But genetic aspects of asthma are very complex, and it does not depend on one only gene like other well-known diseases (celiac disease). Asthma is a poligenic disorder, that means, a number of genes are related with asthma and every gene explains different faces of the disease. It explains how in a family with twins, one has asthma and another does not. As a whole we know that genes decide the age of starting of asthma, degree of inflammation of airways, severity of symptoms, response to medicines and the relationship between asthma and allergies.

Thus genes carry the tendency and the environment (external and internal) makes asthma manifest.

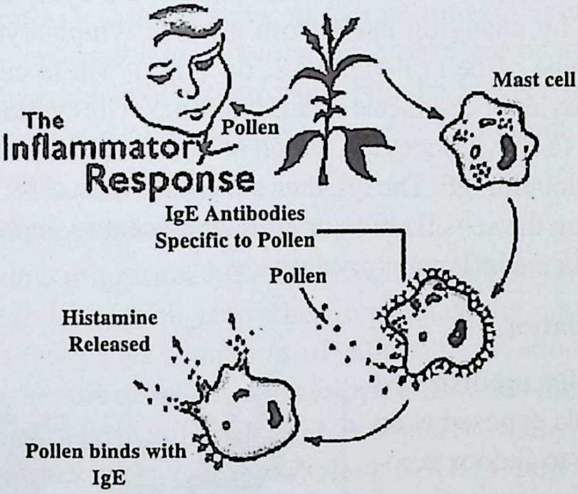
What is the role of immune system in asthma?

Inflammation is an important part of the body's response to injury or infection. Basically, inflammation is the immune system's call to action. Signals sent by the immune system recruit an army of cells to fight off invaders, such as bacteria or viruses. They also start the healing process when there are signs of tissue damage.

For example, when you scrape a knee on a dirty sidewalk, bacteria cling to the wounded tissue. "Scout" cells sense these foreigners and send chemical signals that attract other cells to this spot. These new arrivals release substances that attract some more cells that help clean the wound and draw more body fluid to it. This is why the area becomes swollen.

Inflammation is an essential part of the functioning of a normal lung. Tiny areas of inflammation occur thousands of times a day in order to combat the viruses, bacteria and pollutants to which we are exposed. These hostile factors when inhaled into the lungs stick to the surface of the airways. The body uses the inflammatory response of immunoglobulins to break down and remove them. Normally, none of this activity produces any obvious symptoms. However, asthmatics hyper-react to some factors, aggravating inflammation throughout the small and medium airways. It is thought that asthmatics, over-produce unique antibodies (immunoglobulin (IgE)) in response to these factors. Thus in people with asthma, the lungs and airways overreact to foreign substances in the air, such as cat hair, mold or pollution. Sometimes even clean, cold air can constrict the airways, especially in people with exercise-induced asthma. Thus in people with asthma, the lungs and airways overreact to foreign substances.

You inhale something for the first time, say pollen for example. Your body's immune system decides that the pollen (called an allergen) is a danger to your safety and creates a specific IgE antibody to the pollen. These antibodies are attached to a part of the immune system called the mast cells. Which are found in the inner lining of airways and skin. When you inhale the pollen next time, these IgE antibodies attach onto the allergen and trigger the mast cells to release a host of chemicals called inflammatory mediators.

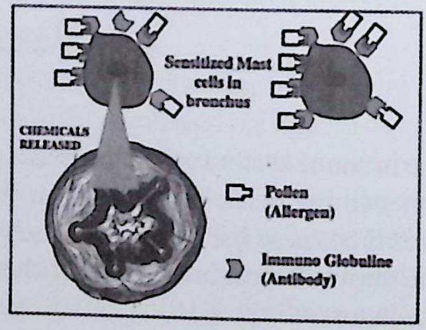

The Inflammatory Response
Pollen
Mast cell
IgE Antibodies Specific to Pollen
Pollen
Histamine Released
Pollen binds with IgE

These substances irritate the sensitive linings of the airways, just as continuous scratching of an insect bite would aggravate your skin rash. As a result, blood vessels near the allergen widen. This increases blood flow bringing as many white blood cells and inflammatory mediators to the area as possible. The walls of the blood vessels become leaky, allowing white blood cells and the inflammatory mediators to leave the blood and engulf the allergen. The inflammation caused by these chemicals keep restricting the airways, thus prolonging the asthma attack. Thus asthma-associated inflammation occurs as a seven-step process:

1) Sensitization

Sensitization occurs as a result of presentation of an antigen to a T-lymphocyte. At this point, no one knows for sure which cell or cells are involved in antigen presentation. When an antigen (for eg., pollen) processed and delivered to a T-lymphocyte, it responds by changing itself from a naive lymphocyte to an allergic type of cell (T-Helper 2, or T-H2). These cells now release a series of chemicals called cytokines. The cytokines find their way to B-lymphocytes, which in turn produce the specific immunoglobulin IgE. The IgE then attaches to mast cells, thereby completing the sensitization or antigen presentation phase, the first step in the inflammatory cascade.

2) Stimulation


Sensitized Mast cells in bronchus
CHEMICALS RELEASED
Pollen (Allergen)
Immuno Globuline (Antibody)

Genetically predisposed individuals exposed at an early age to indoor aero-allergens, occupational antigens and respiratory viral infections become sensitized to certain allergens. In sensitized individuals, many factors (stimulus) may trigger off inflammation. Large number of factors may stimulate an exacerbation of the disease, including allergens and environmental agents, through triggering of mast cells.

The issue of whether all cases of asthma require a specific stimulus remains unresolved and controversial. However, recent studies have provided evidence that most, if not all, asthma does have an allergic basis that may revolve around IgE.

3) Cell signaling

Stimulation activates a complex communication network. Signaling cells issue biological commands that lead to recruitment of inflammatory cells into the airways.

4) Migration

During the triggering and signaling processes, substances are produced that chemically attract migration of white blood cells (leukocytes) into the airways. At various times after exposure to allergen, migration may involve different types of white blood cells called eosinophils, neutrophils, lymphocytes and monocytes. The migration begins within two hours and may continue for up to 48 hours.

5) Activation of inflammatory cells

Following migration into the airways, inflammatory cells (eosinophils) require activation to produce the narrowing of airways that cause symptoms of asthma. Activation probably occurs after the cells' exposure to cytokines and other potential activators found in inflamed lungs. Potential activating substances include interleukin-1 (IL_1), interleukin-5(IL_5), tumor necrosis factor-alpha(TNFA) and granulocyte macrophage-colony stimulating factor (GM-CSF).

6) Tissue stimulation and/or damage

Evidence continues to accumulate to suggest that the inflammatory processes of asthma in the bronchial wall take place at different levels, i.e., of the epithelium, basement membrane, smooth muscles and nerves.

7) Resolution

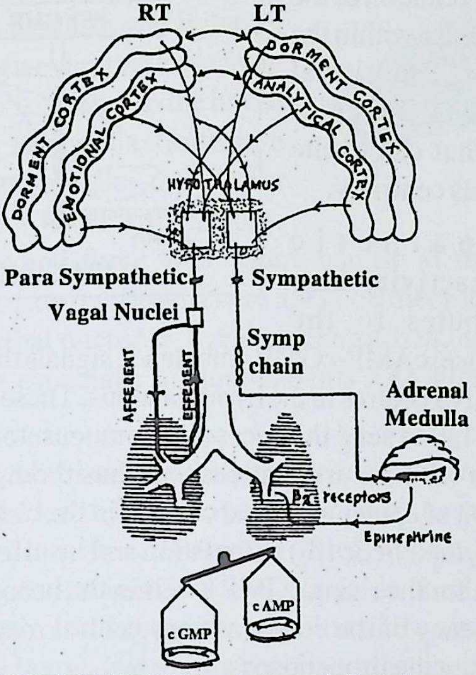
There may be abnormal or incomplete repair mechanisms after the inflammation has stopped. This may lead to chronic persistent inflammation in asthma leading to repeated attacks.

More research is needed to confirm the lack of resolution in the inflammatory process and to identify associated underlying mechanisms. Better understanding of the resolution process could help explain the differences among mild, moderate and severe asthma and lead to the development of more effective therapies.

What is the role of nervous system in asthma?

The normal calibre of the bronchus is maintained by a balanced functioning of sympathetic & parasympathetic parts of the Autonomic Nervous System (ANS). Both these systems function reflexly. The parasympathetic reflex loop consists of the afferent nerve endings (upstream) which terminate under the inner lining of the bronchus, the upstream information reaches the brain stem vagal centre and the efferent (downstream) passes down the vagal centre to end in the bronchus. Whenever the vagal afferent nerve endings are stimulated the reflex arc is excited and bronchospasm occurs by the release of acetylcholine in the efferent nerve endings. This in turn results in excessive formation of cyclic Gaunine Mono-Phosphate (cGMP) that can cause irritation of bronchial smooth muscle.

The sympathetic nerve (relaxing nerves) supply to the bronchus consists of impulses travelling from the hypothalamus to end in adrenal medulla to release a chemical called epinephrine. Epinephrine is carried in the blood stream to the bronchus where it activates the sympathetic receptors which in turn stimulate the bronchial cells to promote formation of cyclic Adenosin


RT
LT
DORMENT CORTEX
EMOTIONAL CORTEX
ANALYTICAL CORTEX
DORMENT CORTEX
HYPOTHALAMUS
Para Sympathetic
Sympathetic
Vagal Nuclei
Symp chain
AFFERENT
EFFERENT
Adrenal Medulla
B2 receptors
Epinephrine
c AMP
c GMP

CAUSE OF ASTHMA - Autonomic Imbalance

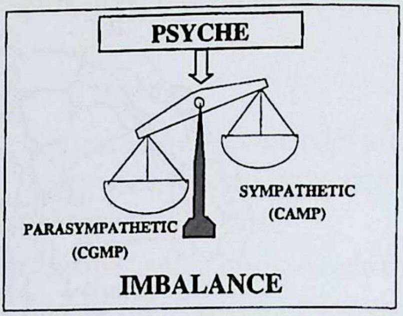
Monophosphate(cAMP). This substance relaxes the bronchial smooth muscles and opens up the air passages.

Thus, the calibre of the bronchus is determined by a very delicate balance in the amounts of cyclic AMP and cyclic GMP. The fundamental event in asthma appears to be the preponderance of cGMP over cAMP.

This imbalance can come about by:

1. Excessive stimulation of the afferent (upstream) vagal receptors on the surface of the airway smooth muscle, triggering the arc reflex of bronchospasm.

Eg: *Irritation by air pollutants, infection, strong odors or the histamine (the chemical released from mast cells during an allergic reaction) can act on the vagal receptors to increase cGMP.*



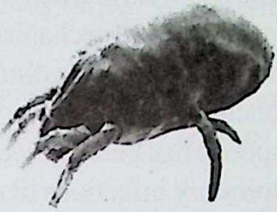
2. Direct excitation of the vagal centre within the brain. Emotional tension is the chief factor that can excite the vagus centrally.
3. Sympathetic hyporeactivity also contributes to the imbalance. cAMP-cGMP imbalance signals the abnormality to the ANS centres in the hypothalamus. These hypothalamic centres fail to send the necessary compensatory impulses to cope up with the asthmatic stress, thus there is insufficient secretion of epinephrine and cortisol in the blood resulting in lesser sympathetic (β_2) stimulation and insufficient cAMP to balance for the rising cGMP levels in the bronchus. Thus the inefficiency of the compensatory central mechanism tends to prolong the bronchospasm.

What triggers asthma attack?

Allergens, fumes, dust and odours, cold air and viruses, emotions and stress, climate and pollution. Any one of these substances can trigger or worsen asthmatic attacks, because the hyperirritable sensory nerves and the immune system respond to even low concentration of these which would not affect normal persons.

Allergies

(a) ***Pollen:*** is the best recognized trigger but animals, particularly cats and horses, are also potent causes of attacks. Chronic exposure may result in more persistent symptoms. The importance of animals in the house may be missed as the patient claims to be able to stroke the cat without 'getting an attack' not realizing that long-term exposure is causing chronic symptoms.



b. ***House Dust*** : The most important factor in precipitating asthma, however, particularly in children, is exposure to the house dustmite. House dustmite is a little insect, smaller than a pin point that lives in carpets, mattresses and furry toys. There can be as many as two million in each mattress! There are good theoretical reasons to believe that ducted or warm air central heating may cause a problem, especially in those patients with allergy to house dustmite.

When a susceptible individual is exposed to a protein in the faecal pellet of the house dustmite over a period of time, the body's white cells become sensitive to this 'foreign substance'. As the protein is inhaled, a reaction to it occurs in the lining of the bronchial tubes, resulting in inflammation of the airways. Hence controlling the house dust mite is very important in some patients, but the measures could be expensive.

c. ***Fumes and Odours***: Cigarette smoke is a potent trigger for many patients, as are dusty environments, where the dust acts as an irritant. Odours, such as scent or after-shave, can be a trigger for certain individuals but this is not an allergy. Presumably, it is an irritant reaction to the chemicals involved, and the best treatment is avoidance where possible, although this may have important consequences.

2. Infection

Asthma and allergic rhinitis are not infectious as they are not caused by any bacteria or virus. Viral infections (not bacterial) of the respiratory tract (e.g.,flu) commonly evoke acute flare up of asthma. The mechanism appears to be that the firing threshold of the vagal nerve endings in the mucosa are reduced and hence broncho-constriction occurs. Increased broncho-constriction response has been noticed even in normal subjects during viral respiratory infections like flu.

Antibiotics are only effective in treating bacterial infections which are very rare in asthma; As viruses are completely unaffected by antibiotics, there is no place for them in the management of asthma. Yet antibiotics are commonly prescribed for episodes of worsening asthma.

3. Physical exertion

Like infections, physical exertion can also trigger off broncho-spasm. In some children this may be the only provocative factor and could be very troublesome. The mechanism has not been completely worked out. However, the development of airway obstruction and its severity are quantitatively related to the degree of airway cooling and drying that occurs during the increased ventilation on exertion. Running in an open cool atmosphere induces bronchospasm to a greater extent than spot jogging or swimming in an indoor warm pool. Both vagal reflex and mast cell mediator release seem to occur in response to airway drying.

4. Climate and Pollution

Many patients with asthma know that their condition is affected by the weather, but there is no uniform pattern. Some prefer cold to warm weather; others prefer hot, dry atmospheres. You, the patient, know best and will usually adjust your behaviour and treatment accordingly.

There is no direct evidence that exposure to air pollution at current levels will turn a non-asthmatic person into an asthmatic.

5. Occupational asthma

Repeated exposure to certain environmental substances can lead to asthma through all the three mechanisms:

a. Antibody formation - lgE mediated,mast cell mediator release. Eg. Animal handlers, bee keepers and bakers.

b. Chemical release - in cotton workers, the cotton track contains a histamin releasing substance.

c. Inflammation-inflammatory bronchitis can occur in persons with pre-existant hyper-responsiveness when exposed to irritant gases involved in industries like Hydrochloric acid, Sulphur-dioxide, Hydrogen Sulphide, Plastic fumes, etc.

6. Psychological Factors

Laughing and crying

Both laughing and crying are symptoms of emotional stress. "Hansi men Khasī" (हँसी में खासी) is an old proverb started from asthmatic patient. When an asthma patient laughs it can aggravate asthma. Not only laughing but also crying can also trigger asthma. Some children use it as a protective method. When confronted with an angry parent or teacher the child cries and induces asthma, which generates sympathy and extra favour. Usually crying and laughing aggravate asthma in children when it is not controlled properly. Over-protective parents are the greatest danger to healthy development of a chronically ill child.

7. Emotions and Stress

Children often become more wheezy at birthday parties, where the combination of excitement and exertion makes asthma more obvious. Asthma was for years regard as a neurotic condition, but it is now clear that emotional factors act only as triggers, not initiators of asthma. Excitement, grief and stress can all trigger an asthma attack.

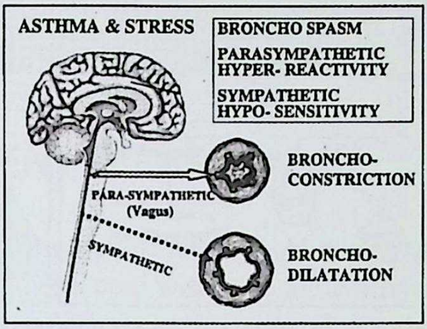
Anxiety & Depression

Not only emotional stress exacerbates asthma but in many patients an asthmatic attack induces emotional stress in the form of anxiety and depression. Despite taking drugs when an asthmatic patient gets recurrence of episodes of asthma it causes anxiety, depression and frustration both to him and the other family members. In this state of mental trauma many a times he may decide, to stop the treatment. This deteriorates the condition further. Hence the problem of asthma should not become a central focus of the family. A regular treatment should be given without undue expression of emotions. Abundant objective data now exists to demonstrate that psychological factors can interact with asthmatic diathesis to worsen or ameliorate the disease process. Persons with asthma or nasal allergy tend to be characterized by a relatively prominent emotional element like dependence, anger or fear and consistently report their inability to express their feelings. Repressed anger in particular is associated with asthma.

Asthmatics are psychologically very sensitive and meticulous. This leads to psychological hypersensitivity with deep rooted conflicts and emotional suppressions. Such long standing tensions (psycho-) can percolate into the physical level to disturb the bodily functions (somatic) which in turn can lead to actual tissue damage as occurs in many psychosomatic illnesses.

How does stress lead to asthmatic attack?

If you want to lift an object from the ground your thought-energy


ASTHMA & STRESS
BRONCHO SPASM
PARASYMPATHETIC HYPER- REACTIVITY
SYMPATHETIC HYPO- SENSITIVITY
BRONCHO-CONSTRICTION
PARA-SYMPATHETIC (Vagus)
SYMPATHETIC
BRONCHO-DILATATION

will be carried through nerves to muscles. Muscles will contract as per message from the nerves and lift the object. Muscles of the limbs are under your control but there are large number of muscles in the body such as those in your windpipe and heart that are not under voluntary control and are termed as involuntary muscles. Muscles of windpipe are controlled by a nerve called Vagus (para-sympathetic). Emotional stress activates Vagus nerve in the brain which in turn causes contraction of the muscles of windpipe leading to narrowing of windpipe.

Some investigations have demonstrated that suggestions can decrease or increase the effect of broncho-constrictor substances. Emotional state,through the mediation of adrenal gland can indirectly affect the allergen-antibody reaction.

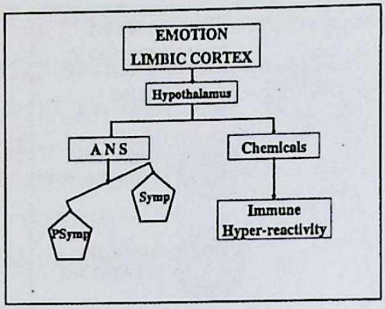
When a person is tense, the pattern of his breathing changes and he takes faster and deeper breath called hyperventilation. Hyperventilation is a known trigger for aggravating asthma. This is similar to exercise-induced asthma.

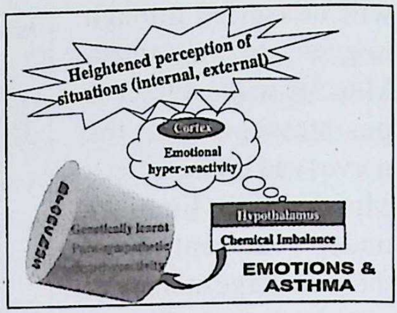
What are the indications that psychological factors are playing a role in asthma?

a. Aggravation of asthma in absence of exposure to any allergic factor or throat infection. Such a situation indicates the possibility of an emotional factor. Most of the times the patient is not aware of this emotional stress.

b. If your symptoms improve when you are away from home, it indicates that emotional stress is of home-origin.

c. If your symptoms improve when you are away from the office it indicates that the emotional stress is in the office.


EMOTION
LIMBIC CORTEX
Hypothalamus
ANS
Chemicals
Symp
PSymp
Immune
Hyper-reactivity


Heightened perception of situations (internal, external)
Cortex
Emotional hyper-reactivity
Hypothalamus
Chemical Imbalance
Genetically learnt
Para-sympathetic
EMOTIONS & ASTHMA

d. Over-sensing the asthma symptoms: despite improvement in asthma, some persons continue to suffer discomfort. High anxiety, extreme awareness of slightest symptoms with depression and wish to die are some of the feelings expressed by such asthmatic.

e. Under-sensing the symptoms of asthma is also not safe. Many a times patient has severe airflow obstruction as measured by peak flow meter but the patient does not feel it and the attack may reach a dangerous state.

Reminiscences of a Partcipant

Kum. S. Sreelakshmi is a young girl of ten years. She was suffering from Asthma for nearly two years and was always listless due to weariness on account of wheezing and blocking of nose. On a suggestion from an acquaintance she was admitted to a three weeks yoga therapy camp organised by Vivekananda Kendra. Regular Practice of what she learnt in the camp helped her immensely. She is now very active, cheerful and is as lively as a girl of her age should be. Being young and receptive to new things which made her healthier, she now goes about humming bhajan/songs and takes interest in extra-curricular activities like reading good books besides what is prescribed for her class. She has a lot to thank Vivekananda Kendra as Asthmatic attack is now a thing of the past and lifts its ugly form rarely.

Parents of
Kum. S. Sreelakshmi

4

MANAGEMENT OF ASTHMA

Asthma is a chronic inflammation of the airways. Although the disease remains episodic and seasonal with reversible airway narrowing with symptom free periods lasting several months. We now realize that many asthmatics have chronic airway obstruction which cannot be completely reversed. This irreversible loss of airway caliber is secondary to structural changes in the airways called airway remodeling. Thickening of the airway wall by scar like tissue just under the inner lining of the bronchus (subepithelial fibrosis) is the cornerstone of remodeling. Goblet cell hyperplasia, submucosal gland hypertrophy and increased vascular permeability, are other changes that are all initiated by chronic airway inflammation involving more than fifty inflammatory mediator chemicals. What we have come to realize is that these changes occur early, within the first few years of diagnos of asthma. Any plan for long-term management of asthma should therefore be aimed at managing the underlying airway modeling and not just manage the symptoms.

What are the preventive measures?

Although a diagnosis of asthma may seem to lead inevitably to the use of drugs to control the condition, there are several ways in which you and your family can help reduce symptoms.

a) *House dust*: Cleaning of house dustmite is very important to prevent asthma it may be very expensive. Sprays to kill the mites are ineffective on their own in controlling asthma. Carpets and loose fittings should be removed. Cuddly toys should be put in the deep freeze for 12 hours a week to kill the mites.

b) *Pets*: Getting rid of domestic pets is a contentious issue. Where there is undoubted allergy to cats, dogs or rabbits, a balance has to be struck between control of asthma using inhalers and the grief that can be caused by banishing the pet!

c) *Bed room temperature* : Some prefer the cooler night air, other people will find it causes them to wheeze more, particularly if they have to get up at night for some other reason.

d) *Food allergies* : A small proportion of patients with asthma, particularly children, undoubtedly have food sensitivities. True food allergy is not particularly common but is undoubtedly more common than many doctors believe. Skin tests can be very misleading and should not be relied upon to diagnose or exclude food allergy. A clear history of, for example, wheezing within minutes of eating a peanut, is easy to recognize, and the best treatment is avoidance. On the other hand, sensitivity to dairy-products or wheat is more difficult to recognise because the effects are more chronic and not so dramatic.

Drug therapy

The whole aim of managing asthma is to put you, the patient, in control of your asthma rather than have the asthma being in control of you. It is very important to avoid certain drugs that cause asthma or make it worse. Aspirin, beta-blockers, which are used in treatment of hypertension, anxiety & palptation are some examples. Even if you have been taking these medications for some time without problems, if you develop wheezy breathlessness, stop taking these tablets.

Drugs for asthma are divided into two categories : relievers and preventers. The reliever medicines work quickly and control the symptoms and attack of asthma. The preventive medicines prevent the onset of symptoms by controlling inflammation.

Drugs for asthma are administered as injection, tablet, syrup or aerosol. Aerosol through inhaler devices is the preferred mode of administration. With aerosols, the dose and the side effects of the drug are much less, and therapeutic effect is better. Devices used for inhaled medications are the metered dose inhaler (MDI), dry powder inhaler (DPI) and nebulizer.

The following guidelines by modern medical experts, employ a graded method of controlling asthma symptoms using the minimum amount of medication.

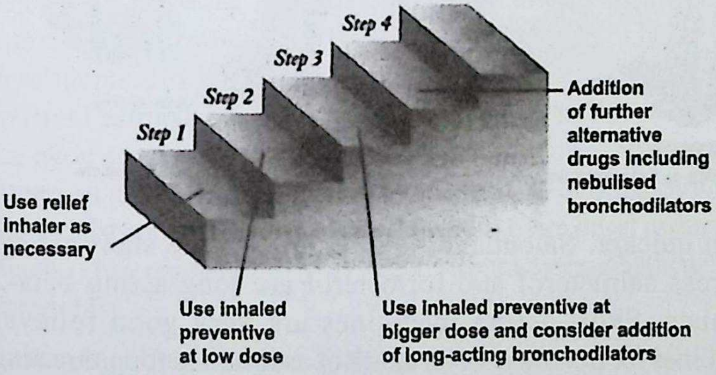
Step 1

Most asthmatics fit into this level. You are advised to use the relief inhalers as required. If your use of the relief inhaler stays at less than one puff a day on average, no further drug treatment need be considered.

Step 2

If you are using more than one puff a day of relief inhaler on an average, you need a preventive inhaler.

Steps to Asthma Control


Step 4
Step 3
Step 2
Step 1
Addition of further alternative drugs including nebulised bronchodilators
Use relief inhaler as necessary
Use inhaled preventive at low dose
Use inhaled preventive at bigger dose and consider addition of long-acting bronchodilators

Step 3

If your symptoms persist, go on to higher doses of inhaled preventive treatment or consider adding another drug.

Step 4

If you are still having problems the use of even higher doses of inhaled preventive treatment, oral steroid use and nebulisers and other treatment options will be considered.

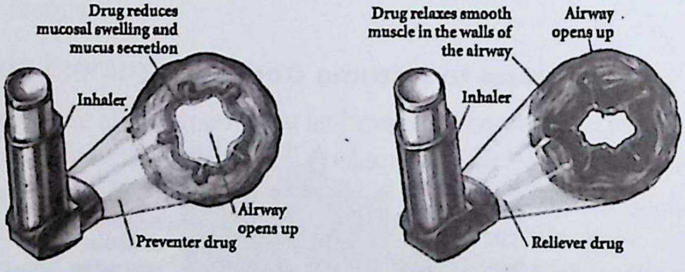
What drugs are available as releivers?

Beta-2 agonists, theophylline and Ipratropium are included in this category.

Sympathomimetic Drugs (*Beta-2 agonists*)

Beta -2 agonists are also available as inhaled preparations. Inhaled preparations are better because the inhaled drug even in a small dose causes equal or better bronchodilatation and the action is much quicker. Salbutamol and terbutaline are short-acting, whereas salmeterol and formeterol are long-acting beta-2 agonists. Short-acting medicines are very good reliever medicines for treatment of an attack of asthma and for pretreating the symptoms associated with exercise. However, regular long-term usage has recently been associated with diminished control

How Drugs act on Blocked Airways


Drug reduces mucosal swelling and mucus secretion
Inhaler
Airway opens up
Preventer drug
Drug relaxes smooth muscle in the walls of the airway
Airway opens up
Inhaler
Reliever drug

PREVENTERS
Acting on Inflamed lining

RELIEVERS
Acting on Contracted Muscle

of asthma. Therefore, it is recommended that use of short-acing beta-2 agonist should be kept to a minimum. Long acting inhaled beta-2 agonists are used to enhance long-term control of asthma symptoms, including those of nocturnal asthma symptoms.

Short and long-acting beta-agonists can be used as reliever medications or as adjuncts for long-term control, but neither has any anti-inflammatory activity; should not be considered as primary therapy.

Theophylline

There are two types of formulations of theophylline: short-acting and the sustained-release. Sustained-release theophylline has more uniform absorption and longer half-life. It inhibits both early and late asthma reactions after an allergen is inhaled. It has some anti-inflammatory effects as well.

Theophylline can have adverse reactions. Nausea and vomiting are early common adverse effects. Other rare effects include tachycardia, arrhythmia, diuresis-seizures.

Anti-Muscarinic Drugs

In the history of treatment of asthma, Datura (धतूरा)is mentioned as the first inhaled medicine and the hukkā (हुक्का) as the first inhaler device. Both were discovered in India. Ipratropium bromide and oxitropium are the therapeutic agents of this class. These agents are used as additional drugs in patients with severe persistent asthma. These can also be used as an alternative to beta-agonists, as first line therapy in chronic bronchitis, and in patients of asthma who do not respond to beta-agonist or when beta-agonist cannot be used particularly in the late onset asthmatic patients. They counter the hyper-reactive para-sympathetic nerves in bronchus.

Dry mouth, blurred vision, glaucoma and urinary retention are the side effects with these drugs. However, these side effects are very uncommon with inhaled anti-muscarinic compounds.

Preventive therapy : Anti-inflammatory drugs

Controlling inflammation has become a central objective of asthma therapy. *Better control of inflammation is essential for better control of the disease* and may open the door to alteration of the disease course. Control of inflammation can occur at several levels. In allergy-driven asthma, environmental measures are very important, as they eliminate disease "triggers."

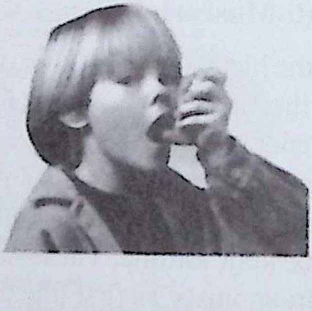
Pharmacologically, inflammation control has been accomplished primarily by use of corticosteroids. Inhaled or oral steroids have been shown to decrease populations of inflammatory cells and cytokines in the airways of asthmatics. Improvement in inflammation is associated with improvement in pulmonary symptoms. The effect likely relates to an interruption in the inflammatory cascade.

There are three main types of preventor drugs : inhaled steroids, Cromoglycate(Intal) and Nedocromil (Tilade).

Inhaled steroids

The word 'steroid' conjures up disturbing pictures in many people's minds, and there is much misinformation circulating about these very effective drugs.

These steroids are not the anabolic steroids used by body builders and illegally by some athletes.



The inhaled version used as preventive treatment is the same sort of drug as tablet steroids used for acute attacks of asthma and, for example, in some patients with arthritis.

The dose of the inhaled drug is extremely small compared with that contained in steroid tablets. For instance, two puffs twice a day of a 'Becotide-100' inhaler delivers 400 micrograms of drugs. In acute asthma, six 5 milligram tablets of steroid will be given per day equal to 30, 000 micrograms of drug i.e., 75 times the dose delivered with 9 puffs/ day.

The side effects of inhaled steroids are few compared with those of oral steroids but, most importantly, are very much less than the dangers of undertreated asthma.

Five percent of patients on inhaled-steroids will complain of a sore or dry mouth (sometimes this is due to thrush) and huskiness of voice; such as teachers or telephone operators.

At higher doses (1500 micrograms per day or more), particularly in older patients, side effects, may be more disturbing and can be minimized by mouth-washing after each dose and by use of large volume spacer devices which act as 'reservoirs' and markedly reduce the amount of drug deposited in the mouth.

Chromoglycate

Sodium cromoglycate has been available for as long as inhaled steroids. It is a very good form of prevention in the milder forms of childhood asthma, particularly in controlling exercise - induced symptoms. It needs to be used three or four times a day, a disadvantage when compared with inhaled steroids, but it can be used simply before exercise to prevent exercise-induced symptoms and has virtually no side effects.

Nedocromil (Tilade)

Nedocromil sodium has a preventive strength similar to that of low-dose inhaled steroids and comes as a mint-flavored dry powder aerosol.

Leukotriene blockers (Singulair, Accolate)

The leukotriene blockers (Singulair, Accolate) are a completely new form of asthma treatment. They are essentially preventive drugs but do have slight broncho-dilator effects. So far, these drugs seem to have relatively few side effects, reassuring for a tablet medication.

Management of Asthma in Emergencies

When an acute attack of asthma occurs there are two mainstays of emergency treatment available: big doses of reliever drug (often via a nebuliser) and big doses of an anti-inflammatory drug (injected or oral steroids). Some patients will be able to self-start emergency treatment with a nebuliser and/ or a course of tablet steroids, but for most patients who have not had a severe attack before, they should contact their GP as quickly as possible or attend the local casualty department. *Delay can be very dangerous and it is better to be safe than sorry.*

Complementary Therapies

There is considerable interest in the role of alternative or complementary therapies for the treatment of asthma. This is due to worries about the side effects of conventional medical treatment and a belief that 'natural substances' are better for asthma than drugs.

Although virtually all of the available standard asthma treatments (drugs) have been proven in properly controlled trials of efficacy, very few complementary approaches have been scientifically asessed. This is why many doctors pour scorn on such forms of treatment. Yet complementary practitioners often quote anecdotal stories of benefit. Consistent successes over many years show that these treatments also do work carefully. This has resulted in a polarization of belief between those who feel that conventional medicine is the only suitable treatment and those who regard conventional treatment as verging on the poisonous!

Psychological Methods

1. Psychotherapy

In this method, you become aware of the psychological conflicts through discussions with the psychiatrist. The supressed emotions in the psyche that were disturbing the autonomic balance to cause asthma or nasal allergy are brought to the surface which can now be handled through knowledge and self-analysis.

Fear, nervousness and anxiety

- Try to search a factor constantly bothering you.
- Introspect, analyse pros and cons and discuss it with your doctor.
- Drugs for emotional stress: There are large number of drugs available for anxiety disorders but the problem is that these drugs lead to depression of respiration. Hence they may prove fatal if taken at the time of severe asthma. Though, in stable asthma lower dose of sleeping pills does not pose an increased risk. The basic rule is to avoid anxiolytic drugs if problem is solved with psychotherapy and reasoning. If necessary, these can be taken for short periods and in minimal dose.

Laughing

- Laughing aggravates asthma, but it does not mean that you should not laugh. *You should but in asthmatic style.* Take a deep breath and laugh till half of breath comes out. Avoid spasmodic laugh causing complete emptying of lungs.
- If you are going to a party with your friends and expect lot of fun and laugh, it is advisable to take an extra dose of inhaler before going to party.

Emotional swings, elation and depression

- An asthmatic patient should control emotional swings and must continue medicines regularly despite these swings.
- Parents of an asthmatic child should make introspection to assess their interference or over-protection in the life of the child.

Stress-induced asthma in children

- Parents should observe a child and try to find out whether the child is using asthma to get extra favour and sympathy.

In case of doubt, try to measure asthma in morning and evening by a peak flow meter. Normal range reading will indicate psychological problem.

Oversensing & undersensing Asthma.

- Both under-sensing & over-sensing the problem of asthma are wrong. The solution lies in regular measurement of asthma with the help of peak flow meter. You should learn to correlate symptoms with peak flow measurements.
- You should realise that if peak flow is low but you do not feel any symptoms, *it means asthma is progressing.*
- If you are over-sensing the problem of asthma, peak flow measurement would be near normal. If reading is near your personal best, you should assure yourself that it is not the disease but the psychological factor and instead of taking drugs *you should use only yoga techniques of chair breathing.*

2. Behaviour therapy

This is based on the principle of learning. This is a process of deconditioning of conditioned reflexes. The sneezing and bronchospasm are reflexes responding to various types of irritants and the body has somehow learnt (conditioned) to over-use these inflammatory responses and autonomic reflexes. The psychologist tries to teach you deconditioning by working from the mind level through reward-punishment technique to stop the hyper-responsiveness of this broncho-constriction loop.

3. Hypnotherapy

Some patients get great benefits from hypnosis; it helps to cope with acute attacks or worsening of asthma. Hypnosis is a technique in which the hypnotist, through suggestions, pushes the psyche into a dream-like state. In this state of mind the subject's body and mind simply respond to the suggestions without any resistance. There are two stages of hypnosis. In stage I, the subject can only experience the suggestions at his mind level whereas in stage II hypnosis, the person can bring about changes at body level. For e.g., a piece of cold iron rod can produce severe pain and a bleb when suggested that it is a red hot piece of iron. Hypno-anaesthesia is widely used in dentistry. The subject simply benumbs his own gums under hypnosis and tooth extraction is carried out.

Under a hypnotic state, a single suggestion to relax the bronchus is sufficient to relieve an attack of asthma or nasal allergy. An asthmatic who learns the technique of auto-hypnosis can often overcome his episodes without resorting to drugs. Hypnotic psychotherapy also contributes to remove the internal conflicts. *Hypnotherapy works purely through tapping one's own mental power to correct the disturbances at the body level.*

Stabilising the vital energy

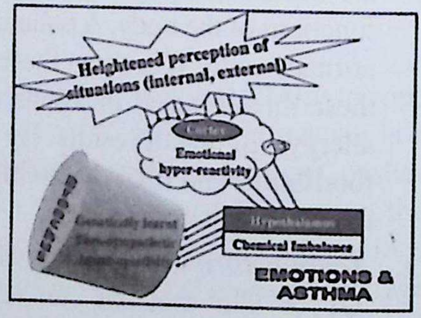
1. ***Homoeopathy:*** By using minute quantities of potentised drugs, the disturbances in the vital energy flow is corrected. Through this method, the symptoms move from centre to the periphery before it finally disappears. Thus an asthmatic might develop worsening of his nasal symptoms or the skin manifestation before it finally disappears. There are several examples of asthmatics who have been helped to a great extent by this method.
2. ***Ayurveda:*** According to ayurveda asthma is a peripheral manifestation of a deeper imbalance. The vāta, pitta and kapha are the three aspects of the vital energy that carry on the functions of the body. A balance of all these three, maintains normal health. Whenever there is over-functioning of any of these three (excess of kapha in case of asthma and nasal allergy), ill health results. By various herbal preparations, food habits and lifestyle modifications, you try to set right this vital imbalance.
3. ***Acupuncture:*** The disturbances in the flow of vital energy 'Qi' or 'Chi' that has caused the disease is set right by

stimulating appropriate points along the specific meridians (called Yin & Yang) in which the flow is disturbed. This is done by using sharp needles stuck at the right points at various depths from the surface of the skin to reach these points along the channel. There is no doubt that acupuncture has found more acceptance in medical circles than have other forms of complementary therapies, particularly with regard to pain relief. It is also one of the few alternative approaches that has been properly tested in clinical tests in asthma. Minor benefits have been shown in mild asthma, but acupuncture has not been shown to be of help in patients with more severe asthma.

4. ***Magneto-therapy:*** It is nowadays becoming evident that magnetic fields can create disturbances in vital energy balance. In an experiment, rats with their head facing north and body axis along the North-South line showed greater restlessness than those oriented in other directions. Controlled magnetic feild treatments on asthmatics have shown beneficial effects.

Yoga Therapy

The definition of Yoga and the principles of Yoga therapy are discussed in the next chapter. Yoga therapy techniques correct the problem from the most fundamental level. The corrections are sought from the innermost layer of our


Heightened perception of situations (internal, external)
Cortex
Emotional hyper-reactivity
Hypothalamus
Chemical Imbalance
EMOTIONS & ASTHMA

existance (Ānandamaya Kośa or the soul or the will the master of the system). A total correction of the bodily disturbances is brought about by correcting the disturbances at the emotional, psychological and the vital energy levels. *The integrated approach uses several techniques with an unique aim of reaching a state of total silence or calmness of mind or deep relaxation and rest.*

It is not an exaggeration to say *that yoga combines the effects of all the methods mentioned earlier.* Let us now see how this is achieved.

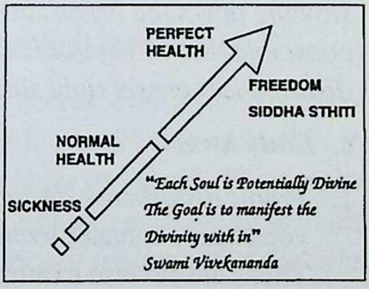
a. *Psychological level*

1. Yoga is a method to turn the mind inwards and achieve deep awareness of functions of internal organs. Internal awareness helps to solve one's own internal psychological and emotional conflicts as we saw in psychotherapy.

> "Awareness is half solution to any problem"

2. The internal awareness helps to change the learnt conditioning and helps to change the pattern of psychological and physiological responses as in behaviour therapy.

3. *Yoga is a technique of unfolding the potential divinity within*, so that the dormant capabilities are opened up consciously. Just like in hypnotherapy, every man can tap his dormant capacities or altering his own physiology under the

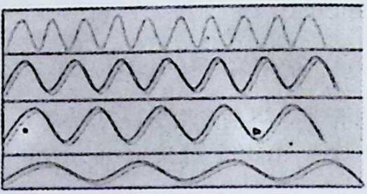


"Each Soul is Potentially Divine The Goal is to manifest the Divinity with in"
Swami Vivekananda

effect of a simple suggestion. Through yoga one does this consciously with self-mastery over such states of consciousness. This is achieved through the total cessation of internal dialogue of the mind. It is known that yogīs in such states of deep inner poise can, not only alter their physiology but can master the laws of nature (external too) as in Siddhis.

b. *Vital energy (Prāṇa) level.*

Prāṇa is the life energy that gives life to each and every cell of the body. It is said that imbalances, blockages in the flow of prāṇa in the prāṇa channels (Nāḍīs) cause diseases. The cause of the disturbed flow is believed to be *excessive speed.*

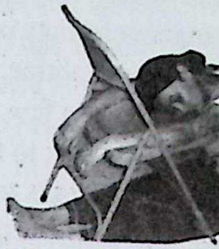


Pranayama is the skill to slowdown the breath

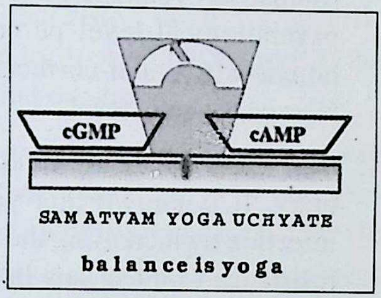
Yoga provides several techniques of getting mastery over this life energy (Prāṇa). Prāṇāyāma corrects the disturbances in the flow of these energies that make all organs function efficiently. An attempt for correcting the disturbances in vital energy flow, we saw, has been tried in Homoeopathy and Ayurveda by drugs and non-pharmacologically by acupuncturists and magneto-therapists. *Yoga corrects the alterations in the Prāṇa flow by slowing down the Prāṇa activity gently and cautiously through conscious, slow, rhythmic breathing. Once slowed down, the disturbances are set right automatically.*

c. *Body level*

1. *Prāṇic disturbance during acute attack:* At the physical level, yogasanas, enhance local relaxation and improves tolerance. There are several examples of asthmatics practising yoga, who learn to relax their bronchus during an attack of asthma



without resorting to drugs. The deep relaxation reduces the element of panic during an attack so that one can direct their mind inwards to relax their bronchus. *The relaxation of the voluntary muscles slowly extends to the involuntary muscles too.* We may compare this action of yoga at the periphery to reliever inhalers containing sympathomimetics.



2. *Internal Bio-feedback*: Further, the internal awareness of the state of the bronchus provides a feedback to learn the art of relaxing one's own bronchus by auto-suggestions like in the case of bio-feedback where one masters the involuntary functions of the body.

3. *cGMP - cAMP imbalance*: We have seen that the bronchial hyper-responsiveness is manifestation of the imbalance due to the excess of cGMP over cAMP in bronchial wall. This imbalance is due to over-activity of the parasympathetic nerves that supply the bronchial muscles.

Can yoga correct this chemical imbalance ?

Yogic deep relaxation and rest decrease the overall activity of the nervous system leading to remarkable reduction in discharge frequency and the trigger threshold. This can be very easilly recognised by practitioners of yoga at their emotional level. *After the practice of yoga one feels so calm inside that the same situations which enraged him earlier* *would no longer trigger his anger.* The duration and force of the anger or anxiety or any emotional reaction go on reducing with yoga practice. As one stabilizes this with regular practices over a few array of fears, huge impulses from the emotional cortex to the Hypothalamus die down. The over reactive pathways get retrained to function normally and trigger threshold of parasympathetic nerves go on reducing. This effect on the nervous system is the one that can reduce the excitement of the para-sympathetic centre so that intrinsic tube of asthma comes under control.

Thus, Yoga by definition is a technic to acheive balance (Samatvam yoga). This balance that is experienced at the psychological level percolates into the physiology as homoeostasis and corrects imbalance at the Autonomic Nervous System level.

4. Yoga has a stabilising effect on the immune system of the body. It is known that yoga can increase tolerance to infection by increasing the overall health and also the local resistance to infections in the respiratory passage. It was observed that the frequency of upper respiratory infections during one year reduced significantly after regular practice of Transcendental Meditation. In infection-induced asthma, the frequency of asthma reduces remarkably once the infection frequency reduces. This has been observed by many of our young patients with infection-triggered asthma.
5. Desensitization: Kriyās may help in developing tolerance to external agents, similar to desensitization therapy for allergens. For example, in a practice called jalaneti one washes the nose with luke-warm saline water and in Sūtraneti a thread or a rubber catheter is introduced into the nose. Here the water and the rubber tube being irritants off the nose, the hyper-responsive nasal mucosa would trigger off a whole chain of events including excessive sneezing, rhinorrhoea (water

running from the nose) and nasal blocking. But under the background of deep relaxation and use of will-power, the person learns to tolerate these irritants without any of these reactions. In other words, *these kriyās have taught how to tolerate the irritants entering the nose without reacting violently*. Similarly the excitability of the nerve endings in the bronchial wall to various irritants causing asthma also can be reduced by another kriyā called Dhouti.

This yogic desensitization or stamina building (Titikṣa) brought about by graded exposure to non-specific irritants in the background of deep relaxation is comparable to immuno-therapy in which increasing doses for specific allergen are presented in the form of injections so that the system gets desensitized to that substance.

10. *Different yogāsanas help to correct the postural abnormalities and improve the respiratory stamina.* They may also help in drainage of secretion. The breathing exercises especially *the chair breathing technique trains diaphragmatic breathing, which is a big help during attacks.*

A. DRUGS FOR ASTHMA

Drugs	Level of action	Side effects
I. Relievers		
1. Salbutamol-Terbutaline	Short acting reliever Selective activation of β_2 bronchial sympathtic nerve endings	• Mild effect on heart • Gastritis
2. Salmeterol Formeterol	long acting reliever β_2 sympathetic agonist	Habituation and ineffectiveness after long-term use.
3. Iprotropium Oxytropium	blocks, parasympathetic - nerve endings	Dry mouth,blurred vision, glaucoma, urinary retention
4. Theophylline group	Bronchial muscle relaxation	Sleeplessness Gastritis
5. Antihistamines	Neutralises histamin in bronchial & nasal lining	Drowsiness Tolerance
II. Preventers		
1. Cromoglycate	Prevents Antigen-antibody union	Almost nil
2a. Steroids inhalers Beclamethasone Budesonide Flutrecasone	• Anti inflammatory effect Stabilises mast cell wall • Primes sympathetic nerve endings • Softening of muscle	Long-term usage growth retardation, oral fungal infection, hoarseness of voice, loss of taste, cataract
2c. Oral or injected corticosteroids Long-term use prohibited.	Life-saving mode of action same as inhaled steroids	muscle weakness hypertension diabetes osteoporosis
3. Leukotriene inhibitors Zafirlucast Zileuton (Singulair, Accolate)	blocks inflammation following exercise, aspirin, allergens	minor side effects.

B. COMPLEMENTARY THERAPIES

Therapy	Level of Action
I. *Psychological methods*	
1. Psychotherapy	Awareness of the psychological conflicts and suppressions
2. Behaviour therapy	Reflex learning. Reverse the learnt-habit of sneezing and wheezing
3. Hypnotherapy	Utilise dormant powers of mind in an altered state of consciousness
II. *Vital energy balance*	
1. Homoeopathy	Corrects the disturbances in the internal milieu
2. Ayurveda	Corrects the excess or deficiency of Tridoṣas, Vāta,Pitta & Kapha.
3. Acupuncture	Flow of Qi (Vital energy) along body meridians, Yin & Yang balance.
4. Magnetotherapy	Corrects vital energy disturbances by altering the magnetic field effects.

C. YOGA THERAPY

The integrated approach of yoga therapy provides self corrective techniques to handle the problems at all levels physical, vital energy, mind, emotions, intellect and spiritual.

Practices	Level of Action	Comparison	Kośa
		Reliever	
1. Chair breathing	Bronchial muscle relaxation	Broncho-dilator drugs	Annamaya (AK) to Ānandamaya (AnK)

2.	Sithilīkaraṇa Vyāyāma & breathing practices	Stamina building	Physio-therapy	(AK) to (AnK)
3.	Kriyās	Mastery over hyper-reactive reflexes.	Immuno-therapy	(AK) to (AnK)
4.	Āsanas	Drainage of secretions; Improves general health; Normalises the body weight; Increases work tolerance	Physio-Therapy	(AK) to (AnK)
5.	Prāṇāyāma	Set right imbalance of Prāṇa (vital energy)	• Ayurveda • Homoeopathy • Magneto-Therapy	Prāṇamaya(PK) (AnK)
6.	DRT Śavāsana	relax the involuntary muscles through relaxing voluntary muscle	Bio-feedback therapy	(AK) to (AnK)
7.	Dhyāna (Meditation)	• Stabilisation of nervous system and emotions. • Reduced metabolism Parasympathetic and sympathetic balance		(MK) to (AnK)
8.	Devotional session	• Emotional stability • Reduced emotional hyper-reactivity. • Reduced hypothalamic discharges, and central vagal stimulations	emotional catharsis	(MK) to (AnK)
9.	Lectures, counseling on yoga vedānta philosophy Happiness analysis	• Self-confidence • Awareness of one's psychological conflicts. • Stress management	Psycho-therapy	(Vijñānamaya Kośa) to (AnK)
10.	Karma yoga Non-reactivity to situation	Working in relaxation prevents build up or suppression of emotions	Laughter therapy	AnK

5

HEALTH AND DISEASE - A YOGIC PROSPECTIVE

Concept of Health and Yoga

According to the World Health Organisation (WHO) the state of Health is defined as a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity. WHO also suggests a fourth dimension spiritual well being. It is clear from this definition that health and ill-health are not two discrete entities as commonly understood but health should be conceived as a continuous function indicating the state of well-being.

In the diagram, the 3rd quadrant 'the region of ill-health' represents what normally we designate as 'Sickness'. Below this, man acts instinctively and is akin to animal man. Coming to the first quadrant, the region of 'Normal Man' the state of normal health is indicated. As he moves along the line further up, he becomes healthier featured by the dormant faculties expressing more vividly in man. This is shown as the region of Super Man, the next region after the human spectrum. In this state, the limitations of normal man namely the strong urges of thirst, hunger, fear and sex are reduced greatly and are fully under control. In the concept of Śrī Aurobindo, the new faculties of deeper

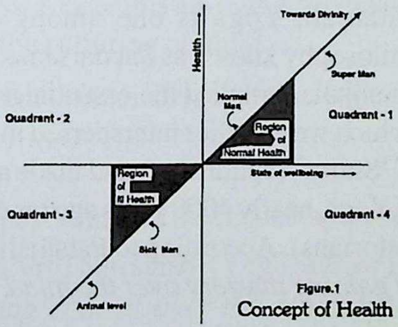

Towards Divinity
Health
Super Man
Normal Man
Quadrant - 2
Quadrant - 1
Region of Normal Health
State of wellbeing
Region of Ill Health
Quadrant - 3
Quadrant - 4
Sick Man
Animal level

Figure.1
Concept of Health

perceptions of the world beyond the five senses emerge in this phase of superhuman existence. Further growth leads man to unfold even deeper layers of consciousness and widen the spectrum of his knowledge to move towards divinity or perfection. In this march towards perfection, Yoga is a systematic conscious process for accelerating the growth of a human being from his animal level and ultimately to divinity. It is a systematic methodology for an all round personality development-physical, mental, intellectual, emotional and spiritual components-of man. Thus, *Yoga in its general methodology for the growth of man to divine heights includes techniques useful for therapeutic applications in making man healthier.*

Before we proceed to understand the generation and implication of illnesses, we need to understand yogic concept of human body.

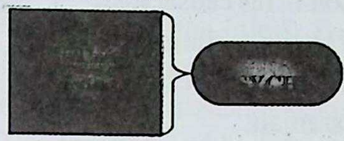
Understanding Yoga

The term Yoga has its verbal root as युज (*Yuj*) in Sanskṛita. *Yuj* means joining. युज्यते अनेन इति योग : (Yu jyate anena iti yogaḥ) Yoga is that which joins. What are the entities that are joined? In the traditional terminology it is joining of जीवात्मा (Jīvātmā) with परमात्मा (Paramātmā), the individual self with the SELF. *It is an expansion of the narrow, constricted egoistic personality to an-all pervasive, eternal and blissful state of REALITY.*

Pātañjala Yoga is one among the six systems of Indian philosophy known as Ṣaṭ darśanas. One of the great Ṛṣis (Seer), Patañjali, compiled the essential features and principles of Yoga (which were earlier interspersed in Yoga Upaniṣats) in the form of 'Sūtras' (aphorisms) and made a vital contribution in the field of Yoga, nearly 4000 years ago (as dated by some famous western historians). According to Patañjali, *Yoga is a conscious process of gaining mastery over the mind.* We will see the details later.

The scope of Yoga as portrayed in Bhagavadgītā and Upaniṣats is far more comprehensive. As Swami Vivekananda puts it "It is a means of compressing one's evolution into a single life or a few months or even a few hours of ones bodily existencc". In general, there is a growth process, due to interactions with nature in all creation. But it may take thousands and millions of years for this natural growth; that is the long, instinctive way in animals. Man, endowed with discrimination power, conscious thinking faculty बुद्धि (Buddhi) and well-developed voluntary controls aspires to accelerate his growth. *YOGA is that systematic conscious process which can compress the process of man's growth greatly.*

BASIC INSTINCTS



Ahara nidra bhaya maithunam ca
samanyametat pashubhirnaranam
Budhirthi Tesam adhikovishesah
Budhirvihinah pashubhih samanah

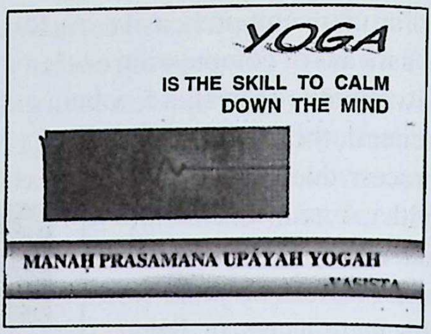
Śrī Aurobindo emphasizes an all-round personality development at the physical, mental, intellectual, emotional and spiritual levels. *He means by Yoga a methodical effort towards self-perfection by the development of the potentialities latent in the individual. It is a process by which the limitations and imperfections can be washed away resulting in a Super-human race.*

Thus, Yoga is a systematic process for accelerating the growth, of a man in his entirety. With this growth, man learns to live at higher states of consciousness. Key to this all-round personality development and growth is the culturing of mind.

We will now see how different texts on Yoga, define yoga.

Definition of Yoga

As mentioned earlier, Patañjali defines in his second aphorism, योग: चित्तवृत्ति निरोध: Yogaḥ Citta Vṛtti Nirodhaḥ. (Yoga Sutras: 1.2) *Yoga is a process of gaining control over the mind.* By so controlling the mind we reach our original state: तदा द्रष्टु: स्वरूपे


YOGA
IS THE SKILL TO CALM DOWN THE MIND
MANAḤ PRASAMANA UPĀYAH YOGAH
VASISTA

अवस्थानम् 'Tadā draṣṭuḥ svarupe avasthānam' (Yoga Sūtras 1.3), then the Seer establishes himself in his causal state. This is the technique of 'mind control' prescribed by Patañjali.

Control involves two aspects - a power to concentrate on any desired subject or object and a capacity to remain quiet when required. All of us have been developing the first aspect namely concentration. *Rarely, the second capacity of man to remain calm and silent has been harnessed.* Yoga mainly emphasizes, this second aspect. In Yoga-Vāsiṣṭha one of the best texts on Yoga, the essence of Yoga is beautifully portrayed thus: मन: प्रशमनोपाय: योग इत्यभिधीयते 'Manaḥ Praśamanopāyaḥ Yoga ityabhidhīyate' - *Yoga is called a skilful trick to calm down the mind. It is an उपाय:(Upāyaḥ) a skilful subtle process and not a brutal, mechanical gross effort to stop the thoughts in the mind.*

An unskilled layman trying to repair a radio is almost sure to spoil it, while an experienced and skilful person knows exactly on what to lay hands and to rectify the malfunctioning. He operates at the right place. Knowledge is the key. Similarly, in the control of mind, a novice tries hard and gets disgusted when he finds himself more 'messed up'. *Yoga gives him the necessary techniques to operate at the right place at the right time to gain complete mastery. This skill is the trick of allowing the mind to calm down and not to use brutal force to stop it.*

One of our asthma patients would sit up in the middle of the night with an episode of asthma and shift her mind to a state of total inner quietitude through chanting on OM and thus succeded in stoping all her medicines to remain free from asthma after 6 months of regular practice.

In action, Yoga is a special skill which makes the mind reach its subtler state: योग: कर्मसु कौशलम् 'Yogaḥ Karmasu Kauśalam' (Gita 2.50), Yoga is dexterity in action. The dexterity is in maintaining relaxation and awareness in action. Relaxed action is the process. Efficiency in action is an outcome. Thus, Yoga is a skilful science of gaining mastery over the mind. Yoga is normally and traditionally conjectured and popularly known as a process or a technique to reach the ultimate state of perfection. However, yoga is even defined as the states of higher powers and potentialities and as the ultimate state of Silence. Further yoga is also described as the power of all creative endeavours and creation itself.

The subtle state of mind featured by 'Steadiness' is referred to as Yoga. Yoga is a state of great steadiness at emotional level; balance of concentration and detachment at mental level and homeo-stasis at body level. It integrates the personality by bringing body-mind coordination in a well-balanced way.

Thus, Yoga is

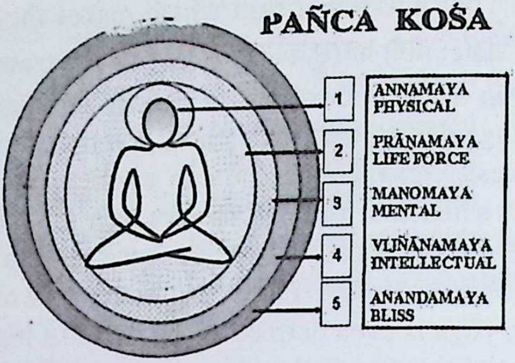
i. a process for elevating oneself through calming of mind,
ii. also the very states of higher, subtler layers of mind (and)
iii. conceived as a creative power in man and that of the Reality itself.

3. The Five Sheaths of Existance

In the tradition of Yoga and Upaniṣats there are five aspects of existence of man. The first and the grossest - the physical frame which we are all so familiar is called Annamaya kośa. The second subtler sheath is the Prāṇamaya kośa featured by the predominance of Prāṇa, the life principle. Through the invisible channels called NĀḌĪS in this sheath flow the PṚĀṆA.

The next sheaths in the order of subtlety are :

i. Manomaya Kośa, ii. Vijñānamaya Kośa and
iii. Ānanadamaya Kośa.

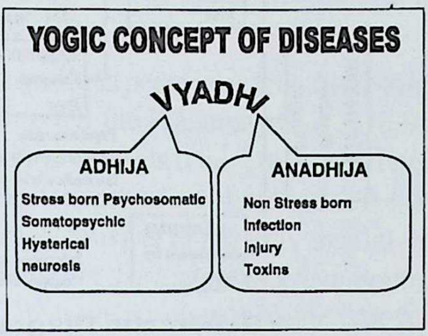


THE FIVE SHEATHS (KOŚAS) OF OUR EXISTENCE

Ā schematic diagram shown in indicates Ānandamaya Kośa as the outer most and the subtlest. As the sheaths become subtler, the freedom of operation in the living beings increases, the bondage decreases and the bliss associated with it also increases. While in Manomaya Kośa the creative power predominates. in Vijñānamaya Kośa it is the power to discern and discriminate. Bliss is embodied in Ānandamaya Kośa, the highest stage of evolution in the manifested existence. It is the subtlest among the five sheaths of existence. In his journey towards the Ultimate, Man crosses these sheaths of existence one by one. Through analysis called 'Pañca Kośa Viveka' (Knowing through experience, one's five sheaths of existence) and the associated practices called 'Tapas', man transforms himself by gradually getting relieved from the bondages and constrictions of each sheath. This is one of the methods of reaching the ultimate goal enumerated and described in the Upaniṣats.

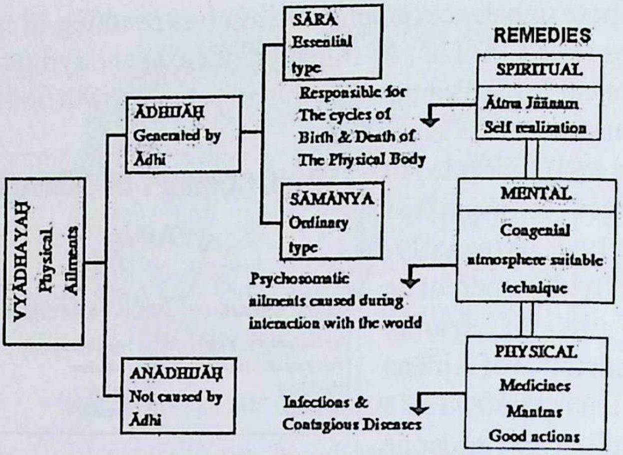
4. The Science of liinesses

In Ānandamaya Kośa, a man is the healthiest with a perfect harmony and balance of all his faculties. At Vijñānamaya Kośa there are movements, but are channelised in the right direction. As such, it is in the Manomaya level where imbalances start, say the Yoga texts. Likes and dislikes have come to play at this level. These imbalances amplify themselves resulting in mental illnesses called 'Ādhis'. At this stage there are no symptoms at the physical level. Prompted by the perpetual growth of desires, these mental diseases, Ajñāna(अज्ञान) concealed in us, begin to manifest themselves externally. Gradually they percolate to the physical frame. Preponderance of Ajñāna (ignorance about one's real state of bliss) leads one to perform wrong actions as the eating of unwholesome food, living in unhealthy dwellings, doing things at untimely hours, injuries inflicted, association with the wicked, evil thoughts, etc. These breed physical diseases called Vyādhis or the secondary diseases.



The Ādhis (primary diseases) are two-fold-Sāmānya (ordinary and Sāra (the essential). The former includes the diseases incidental to the body while the latter the rebirth to which men are subject. The Sāmānya are normally produced during the interactions with the world. These may be termed as Psychosomatic Ailments. When dealt with suitable techniques and congenial atmosphere, Ādhis of this ordinary type will vanish. Along with it are destroyed the physical ailments, Vyādhis caused by these Ādhis (Ādhijāḥ Vyādhayaḥ). The subtler Ādhis of the essential type, Sāra, which cause the birth of the physical body can be destroyed only by the Realization of the causal states of mind and a corresponding ability to live in Vijñānamya and Ānandamaya Kośas. In that case, man transcends the cycles of birth and death.

This concept of Vyādhis caused by Ādhis is summarised schematically in Figure 3. The figure also depicts the second class of ailments Anādhijāḥ Vyādhayāḥ-those not or iginated


VYĀDHAYAḤ
Physical
Ailments
ĀDHIJĀḤ
Generated by
Ādhi
ANĀDHIJĀḤ
Not caused by
Ādhi
SĀRA
Essential
type
Responsible for
The cycles of
Birth & Death of
The Physical Body
SĀMĀNYA
Ordinary
type
Psychosomatic
ailments caused during
interaction with the world
Infections &
Contagious Diseases
REMEDIES
SPIRITUAL
Ātma Jñānam
Self realization
MENTAL
Congenial
atmosphere suitable
technique
PHYSICAL
Medicines
Mantras
Good actions

A Schematic Diagram of Ailments

by mind. These would probably include the infectious and contageous diseases. Through conventional medicines (the chemotherapy of modern medicine can come under this heading).

5. The Psychosomatic Illness

Among the two types of Ādhis, the Sāmānya (ordinary) type corresponds to the modern psychosomatic ailments.

The yoga texts say:

When the mind is agitated during our interactions with the world at large, the physical body also follows in its wake. These agitations cause violent fluctuations in the flow of Prāna in the Nāḍīs. The Prāṇa flows in wrong paths flying from one to other without rhythm and harmony. The Nāḍis can no more, in this condition, maintain stability and steadiness, but quiver. Due to these disturbances in the Prāṇa and unsteadiness in the Nāḍīs, the food does not get properly digested. There arises *Kujīrṇatvam* (wrong digestion), *Ajirṇatvam* (non-digestion) and *Atijīrṇatvam* (over-digestion). When this improperly digested food settles down in the body amidst such commotion, it results in ailments of the psychosomatic type. This process of Ādhi becoming

Vyādhi is shown schematically Contained in this process of generation of psychosomatic ailments as the method for treating such ailments.

6. The Integrated Approach

Disturbances in the Manomaya Kośa percolates into the physical sheath (Annamaya Kośa) through the Prāṇamaya Kośa. Hence, in the treatment of these Adhijā vyādhis it becomes mandatory to work at all the levels of existence to bring about quick results. The integrated approach, thus, consists in not only dealing the physical aspect of the problem, *but use techniques to operate on all layers of our existence.* The large number of Yogic practices available in the texts of Yoga and Upaniṣats are adopted to balance and harmonise the disturbances at each of the Kośas and tackle this set of complex psychosomatic ailments.

(a) Annamaya Kośa Practices : The Physical body

Kriyās, loosening movements and Yogāsanas are used to operate at the Annamaya Kośa level, to remove the physical symptoms of the ailments.

(i) Kriyās are Yogic processes described in Haṭha Yoga to cleanse the inner organs of our body.

Kriyās

- Activate and revitalise the organs
- Tone up the functions of organs
- Desensitize, the hyperactive reflex loops
- Promotes deep internal awareness.

Among the major Kriyās enumerated in the text of Yoga simplified versions of a few Kriyās like catheter Neti, Jala Neti, Kapālabhāti, Agnisāra, Vaman Dhouti (Kuñjala Kriyā) etc., are used extensively.

(ii) Loosening exercises : Very simple yogic physical movements to mobilise and activate particularly affected parts of the body are used. Some easy physical exercises are adopted to fulfill the needs of the particular ailments to :

Physical

- Loosening the joints
- Stretch and relax the muscles
- Improve the strength & stamina

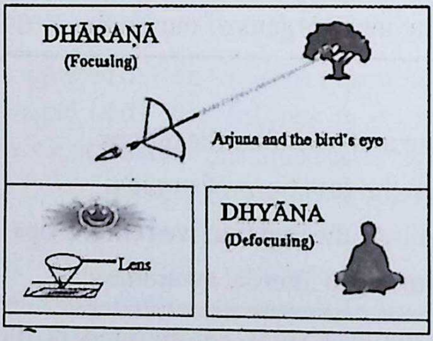
(iii) Yogāsanas : Yogāsanas are physical postures often imitating the natural positions of the animals, meant to tranquil the mind.

Āsanas

- Physical revitalization.
- Deep relaxation and mental calmness.

(b) Prāṇamaya Kośa; The Sheath of Prāṇa

Prāṇa is the basic life principle. Prāṇāyāma is a process for gaining control over Prāṇa. Illnesses have characteristic prāṇa abnormalities. Through practice of proper breathing, Kriyās and Prāṇayāma, these imbalances the Prāṇayāma Kośa can be corrected. Suitable types of Prāṇāyāma and breathing help to remove the random agitations in Prānic flows in the Prāṇamaya



Kośa. Thus, the ailments are handled at this Prāṇamaya Kośa level.

(C) Manomaya Kośa : Mind Body

A direct operation on this level is made possible by the last three limbs of Aṣṭāṅga Yoga of Patañjali - Dhāraṇā, Dhyāna and Samādhi. The culturing of mind is accomplished by focussing of the mind (Dhāraṇā) initially, followed by relaxed dwelling of the mind a single thought (Dhyāna) for longer and longer durations leading ultimately to super-consciousness (Samādhi).

A progressive habituation allows the mind to remain relaxed during the period of meditation (Dhyāna). The benefits of Transcendental Meditation, a simple standardised techniques, are numerous, interesting and noteworthy. Its application to treat many psychosomatic ailments has become popular.

Stress is Speed
Happiness is Silence

To handle and gain control over the basic cause for mental agitations, we use the Yoga techniques that control our emotions. A devotional session containing Prayers, Chants, Bhajans, Nāmāvalis, Dhuns, Stotrās etc., help to build a congenial atmosphere to evoke, recognize, attenuate and dissipate the emotions. Thus, control over emotions is obtained through the path of divine love. The emotional imbalances and upsurges are eliminated by such control.

(D) Vijñānamaya Kośa: Knowledge body

A basic understanding is the key to operate from Vijñānamaya Kośa. Upaniṣads are the treasury of such knowledge which is the redeemer of all miseries and obsession. It is the lack of that inner Jñāna which is responsible for many wrong habits, agitations, etc. The Happiness Analysis - Ānanda Mimāmsā - of the Taittirīya Upaniṣat handles the most fundamental problem relevent to all living creatures. It helps the person to change his attitude of greed and deep attachment to material possessions and enjoyments. *The realisation that happiness is within and 'each one of us' in our causal state is 'Ānanda' embodied, removes all doubts, clears the mind and stabilizes the body.* As a result, man's outlook in life changes. *Knowledge burns the strong attachments, obsessions, likes and dislikes which are the basic reasons for the agitations of mind.* The Sāra type of Ādhis can only be removed by this knowledge (Ātma-Jñāna or Self-Realisation).

The approach of Yoga therapy has deep roots in Upaniṣats and texts on Yoga. The basic set of yogic practices (see index) used in the treatment of respiratory ailments has been developed on the foundations of the integrated approach of yoga therapy described above. They can be used for prevention, treatment as well as rehabilitation of bronchial asthmatics. A set of such practices is listed below.

The following is an extract from Laghu Yoga Vāsiṣṭha (in Samskṛta) which describes the genesis of illnesses and suggests the remedy for the same.

राम उवाच ।। किंविनाशाः किमुत्पादाः शरीरेस्मिन्मुनीश्वर ।
आधयो व्याधयश्चैव यथावत्कथयाशु मे।।

वसिष्ठ उवाच।। देहदुःखं विदुर्व्याधिमाध्याख्यं वासनामयम् ।
मौर्ख्यमूले हि ते विद्यात्तत्वज्ञानपरिक्षये ।।२।।

अतत्त्वज्ञानवशतस्त्विंन्द्रियाक्रमणं विना ।
हृदि तानवमुत्सृज्य रागद्वेषेष्वनारतम् ।।३।।

इदं प्राप्तमिदं नेति जाड्यात्सुघनमोहदाः ।
आधयः संप्रवर्तन्ते वर्षासु मिहिका यथा ।।४।।

भृशं स्फुरन्तीष्विच्छासु मौर्ख्ये च घनतां गते ।
दुरन्ताभ्यवहारेण दुर्देशाक्रमणेन च ।।५।।
दु:कालव्यवहारेण दु:क्रियास्फुरणेन च ।
दुर्जनसंगदोषेण दुर्भावोद्भावनेन च ।।६।।

क्षीणत्वाद्वातिपूर्णत्वान्नाडीनां रन्ध्रसंततौ ।
प्राणे विधुरतां याते काये च विकलीकृते ।।७।।

दौ: स्थित्यकारणाद्दोषाद्व्याधिर्देहात्प्रवर्तते ।
नद्या: प्रावृण्निदाघाभ्यामिवाकारविपर्यय: ।।८।।

प्राक्तनी चैहिकी वापि शुभा वाप्यशुभा गति: ।
यैवाधिकासैव तथा तस्मिन्योजयति क्रमे ।।९।।

आधयो व्याधयश्चैवं जायन्ते भूतपञ्चके ।
कथं श्रृणु विनश्यन्ति राघवानां कुलोद्वह ।।१०।।

द्विविधो हि व्याधिरस्तीह सामान्य: सार एव च ।
व्यवहारश्च सामान्य: सारो जन्मनि य: स्मृत:।।११।।

प्राप्तेनाभिमतेनैव नश्यन्ति व्यावहारिका: ।
आधिक्षये चाधिभवा: क्षयन्ते व्याधयोप्यलम् ।।१२।।

आत्मज्ञानं विना सारो नाधिर्नश्यति राघव ।
यथा रज्ववबोधेन विना सर्पो न नश्यति ।।१३।।

अनाधिजा व्याधयस्तु द्रव्यमन्त्रशुभक्रमै: ।
चिकित्सकादि शास्त्रोक्तै:नश्यन्ति त्वं च वेत्सि तत् ।।

राम उवाच।। आधि: कथं भवेद्व्याधि: कथं च स विनश्यति ।
इति मे भगवन्ब्रूहि प्रसन्नपदया गिरा ।।१५।।
वसिष्ठ उवाच ।।चित्ते विधुरिते देह: संक्षोभमुपयाति हि ।
तथाहि रूषितो जन्तुरग्रमेव न पश्यति ।।१६।।

अनवेक्ष्य पुरोमार्गममार्गमनुधावति ।
प्रकृतं मार्गमुत्सृज्य शरार्तो हरिणो तथा ।।१७।।

संक्षोभात्साम्यमुत्सृज्य वहन्ति प्राणवायवः ।
असमे वहति प्राणे नाड्यो यान्ति विसंस्थितिम्।।१८।।
असम्यक्संस्थिते भूपे तथा वर्णाश्रमक्रमः ।
कुजीर्णत्वमजीर्णत्वमतिजीर्णत्वमेव वा ।।१९ ।।

दोषायैव प्रयात्यन्नं नाडीप्राणविपर्ययात् ।
यान्यन्नानि विरोधेन तिष्ठन्त्यन्तःशरीरके ।।२०।।

तान्येव व्याधितां यान्ति परिणामस्वभावतः ।
एवमाधेर्भवेद्व्याधिनाशाच्च नश्यति ।।२१।।

यथा विरेकं कुर्वन्ति हरीतक्यः स्वभावतः ।
भावनावशतः कार्यं तथा यरलवादयः ।।२२।।

शुद्धया पुण्यया साधो क्रियया साधुसेवया ।
मनः प्रयाति नैर्मल्यं निकषेणेव काञ्चनम् ।।२३।।

आनन्दो वर्धते देहे शुद्धे चेतसि राघव ।
पूर्णेन्दावुदिते सम्यङ्नैर्मल्यं भुवने यथा ।।२४।।

सत्त्वशुद्धौ वहन्त्येते क्रमेण प्राणवायवः ।
जरयन्ति तथान्नानि व्याधिस्तेन विनश्यति ।।२५।।

आधिव्याध्योरिति प्रोक्तौ नाशोत्पत्तिक्रमौ त्वयि ।।

Rāma Uvāca

Kimvināśāḥ kimutpādāḥ śarīresminmunīśvara,
Ādhyayo vyādhayaścaiva yathāvatkathayaśu me. (1)

Dehaduḥkham vidurvayādhimādhyākhyam vāsanāmayam,
Maurkhyamūla hi te vidyātattvajñānaparikṣaye. (2)

Atattvajñānavaśatastvinndriyākramaṇam vinā,
Hṛdi tānavamutsṛjya rāgadveṣeṣvanāratam. (3)

Idam praptamidam neti jādyātsughanamohadāḥ,
Ādhayaḥ sampravartante varṣāsu mihika yathā. (4)

Bhriśam sphurantīṣvicchāsu maurkhye ca ghanatām gate,
Durantābhyavahāreṇa durdeśākramaṇena ca. (5)

Duḥkālavyavahāreṇa duḥkriyāsphuraṇena ca,
Durjanasaṅgadoṣeṇa durbhāvoddbhāvanena ca. (6)

Kṣīṇatvādvātipūrṇatvānnāḍīnām randhrasantatau,
Prāṇe vidhuratām yāte kāye ca vikalīkṛta. (7)

Dauḥ sthityakāraṇaṇāddoṣadvyādhirdehātpravartate,
Nadyāḥ prāvṛṇnidāghyābhyāmivākāraviparyayaḥ. (8)

Prāktanī caihiki vāpi śubhā vāpyaśubhā gatigḥ,
Yaivādhikāsaiva tathā tasminyojayati krama. (9)

Ādhayo vyādhayaścaivam jāyante bhutapañcake,
Katham śṛṇu vinaśyanti raghavānām kulodvaha. (10)

Dvividho hi vyādhirastīha sāmānyaḥ sāra eva ca,
Vyavahāraśca sāmānyaḥ sāro janmani yaḥ smṛtaḥ. (11)

Prāptenābhimatenaiva naśyanti vyāvahārikāḥ,
Ādhikṣaye cādhibhavāḥ kṣayante vyādhayopyalam. (12)

Ātmajñānam vinā sāro nādhirnaṣyati Rāghava,
Yathā rayvavabodhena vinā sarpo na naśyati. (13)

Anādhijā vyādhayastu dravamaritrasubhakramaiḥ,
Cikitsakādi śāstroktaiḥrnaśyanti tvam ca vetsi tat. (14)

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Rāma Uvāca

Ādhiḥ katham bhavedvyādhiḥ katham ca sa vinaśyati,
Iti me bhagavanbrūhi prassapadayā girā. (15)

Anavekṣya puromargamamargamanudhāvati,
Prakṛtam mārgamutsṛjya śarārto hariṇo tathā. (17)

Saṅkṣobhātsāmyamutsṛjya vahanti prāṇavāyavaḥ,
Asme vahati prāṇe nādyo yānti visansthititam. (18)

Asamyaksansthite bhūpe tathā varṇāśramakramaḥ,
Kujīrṇatvamajīrṇatvamatijirṇatvameva vā. (19)

Doṣāyaiva prayātyannam nāḍīpraṇaviparyayat,
yānyannāni virodhena tiṣṭhantyantaḥ śarīrake. (20)

Tānyeva vyādhitām yānti pariṇāmasvabhāvataḥ,
Evamādhervedvyādhināśācca naśyati. (21)

Yathā virakam kurvanti harītakyaḥ svabhāvataḥ,
Bhāvanāvaśataḥ karya tathā yaralavādayaḥ. (22)

Śuddhāya puṇyayā sādho kriyayā sādhusevayā,
Manaḥ prayāti nairmalyam nikaṣeṇeva kāñcanam. (23)

Ānando vardhate dehe śuddhe cetasi Rāghava,
Pūrṇendāvudhite samyaṇanairmalyam bhuvaneyathā. (24)

Sattvaśuddhau vahantyete krameṅa prānavāyavaḥ,
Jarayanti tathānnani vyadhistena vinaśyati. (25)

Ādhivyādhyaoriti proktau nāśatpathi kramau tvayi.

The following is the translation of Samskṛt text taken from Yoga-Vāsiṣṭha:

Rāma interposed and said: Please enlighten me as to the origin and destruction of mental and bodily diseases. In answer to this Vasiṣṭha continued: The pains that afflict the body are called the secondary diseases, whilst the Vāsanās that affect the mind are termed mental or primary diseases. We have reached our present state through the absence of the transcendental Jñāna, want of mastery over our sense organs and the perpetual growth of desire and egoism in the mind. And our delusion becomes intensified in us by forgetting the degradation of our state through such causes. With the growth of such delusion, the mental disease also conceals in us like the snows of winter. When the intense desires of a person begin to manifest themselves externally and the Ajñāna in him preponderates, he performs fearful Karmās and these in their turn breed bodily diseases. The body is further subject to diseases through such actions as the eating of unwholesome food, living in unhealthy countries, doing things at unseasonable hours, injuries inflicted, association with the wicked, longing after improper things, evil desires, bad thoughts, the distention and contraction of the orifices of the Nāḍis in the joints, etc. and the interrupted flow of the beneficial Prāṇās throughout the body-these cause the body to wither. These flourish in the form of diseases in the body, waxing and waning like the floods in a river during the different seasons. The body attracts effects to itself according to the nature of its countless affinities, good or bad, whether in previous births or in the present one. Thus we see diseases, primary and secondary, arise through the five fold Bhūtas (elements).

Now listen. Oh Rama, to the manner in which the two forms of disease, primary and secondary, are destroyed in two ways. The wise say that primary disease has two sub-divisions: sāmānya (ordinary) and sāra (essential). The former includes the diseases incidental to the body, while the latter the rebirth to which men are subject. If the diseases which afflict this body return to their primal state then they are destroyed. Their primary causes being (bad) thoughts, if these thoughts destroyed, all bodily diseases will vanish. But the disease of rebirth, coming under the head of sāra, will never go except through Atma-Jnana. Is it possible to suppose that the misapprehension of a serpent in a rope can be removed except through the discovery of the real rope? But those grievous diseases of the body which do not arise through the original cause can be extirpated by mantras, medicine and the many means used by men well versed in medical lore. I need not expatiate upon this subject any further here.

Here Rama asked Vasistha how mental diseases arise and how they are destroyed. Vasistha proceeded: When the manas is agitated, then this body also follows in its wake. And when the body is agitated, then there is no proper perception of the things that are in one's way and Prāṇa flies from its even path on to a bad road, staggering like an animal wounded by an arrow.

Through such agitation, Prāṇa, instead of pervading the whole body steadily and equally, vibrates everywhere at an unequal rate. Therefore the Nāḍis do not maintain a steady position, but quiver. Then, to the body which is the receptacle of food digested partially or completely, the Nāḍis are simply death, because of the fluctuation of the Prāṇās. The food which settles down in this body amidst such commotion is transformed into incurable diseases. Thus through the primary cause (of the mind) the disease of body is generated. If this primary cause be annihilated at its root then all diseases will be destroyed. Now hear of the path by which diseases may be removed by the uttering of Mantras. Like base gold which, when placed in the crucible is transformed through alchemical processes into pure gold, the mind is rendered unfailingly pure through true, virtuous and pure actions and by serving the wise. In the mind purified thus there is unalloyed bliss. Is not the whole world exhilarated with joy when the soft and delicious moon begins to shed its silvery light? If the mind becomes purified with true Sattvagua, then Prāṇa-Vāyu will begin to circulate freely throughout the body, the food taken will be digested properly and hence no diseases will arise. I have thus described to you the path by which the two kinds of diseases can be destroyed.

6

BREATHING PRACTICES

Introduction

Hereditary tendencies and family influences coupled with home atmosphere play a vital role in the personality development of all of us. Of particular value are the formative years of childhood days. Deficiencies and subnormal tendencies deep within manifest in prāṇic imbalances featured by wrong breathing rhythms, speeds and haphazardness, manifesting as asthma. Corrections of breathing patterns is one of the most effective ways by which many of these problems in children as well as in the grown ups can be solved. Also good breathing habits harness the energies for systematic development of the physique and the psyche.

Respiratory system is a bridge between the conscious and the sub-conscious, voluntary and the involuntary or, in general, the body and mind. The system is both voluntary as well as involuntary. Using the voluntary control we change the involuntary functions.

The objectives of the breathing practices :

1. Training for full utilisation of all lobes of the lungs.
2. Normalise breathing rate.
3. Make the breathing uniform, continuous and rhythmic.

   The practices include i) certain Yogic cleansing practices as well as, ii) sectional breathing and, iii) full yogic breathing.

The principles involved in regularising the breathing are :

i. Ability to increase and decrease the breathing rate.

ii. Developing awareness of breathing through the movements of different parts of the body.
iii. Slow down exhalation longer than inhalation.

Special tips for beginners

i. First emhasize the movement of hands, legs, abdominal or thoracic muscles as needed in each exercise. Correct the movements.
ii. Use 'in' and 'out' instructions of the mind (or that of teacher) for inhalation & exhalation. Emphasize on full breathing each time.
iii. Synchronise breathing with the corresponding movements. Check and correct.
iv. Initially the movements will be faster to cope with the higher; breathing rate. As progress is made, the movements will get slower. Feel the movement of air filling and emptying the lungs. Develop an awareness of breathing.
v. Close the eyes and repeat a few rounds retaining the awareness.

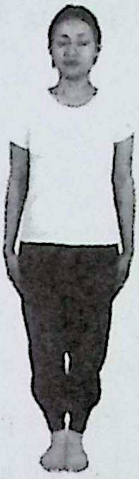
Śithilīkaraṇa Vyāyāma Benefits

1. Reduces the fat, specially from abdominal region which is very important in diabetes mellitus.
2. Helps in reduction of body weight in over-weight diabetes and maintaining the body weight in over-weight diabetes and maintaining the body weight in under-weight diabetes.
3. Increases the strength, stamina and tones up the body.
4. Most important, it creates better gradient to transport glucose from the blood to the cells, using the available insulin effectively without demanding extra insulin.

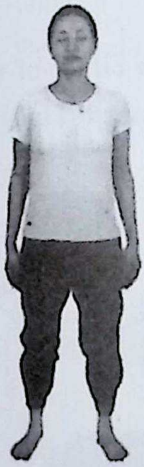
A. Sthiti (initial) and Śithila (relaxation) postures

(for all breathing practices, Śithilīkaraṇa Vyāyāmas and Yogāsanas)

Initial Standing Posture: Tāḍāsana



- Stand erect with feet close together, knees together.
- Hands along the thighs with fingers stretched out.
- The legs, trunk and the head aligned in a straight line.
- Close the eyes.



Standing Relaxation Posture: Śithila Tāḍāsana

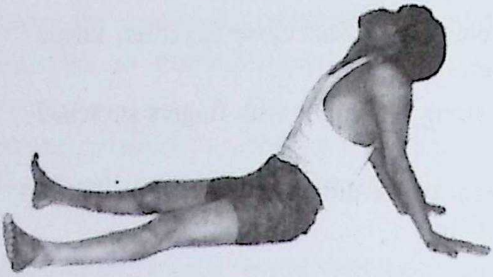
- Stand erect with legs about six to twelve inches apart, hands hanging freely by the side of the body with the shoulders collapsed.
- Make sure that the body is completely relaxed.
- Gently close the eyes.

Initial Sitting Posture: Daṇḍāsana

- Sit with both legs stretched and heels together.
- Place the palms on the floor by the side of the buttocks.
- Make the spine, neck and head erect.
- Close the eyes.

Sitting Relaxation Posture: Śithila Daṇḍāsana

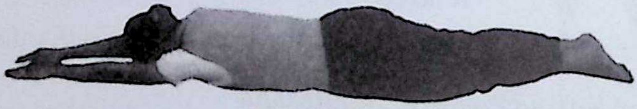
- Sit with legs stretched apart and relaxed.
- Slightly incline the trunk backwards, supporting the body by placing the hands behind.



- Fingers point backwards.
- Let the head hang freely behind or rest on either of the shoulders.
- Gently close the eyes.

Initial Prone Posture

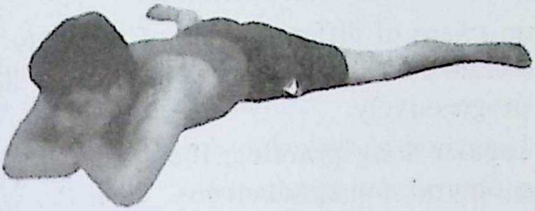
- Lie down on the abdomen with legs together, toes pointing outward and the soles of the feet facing up.



- Chin or Forehead touching the ground.
- Stretch the hands straight above the head, biceps touching the ears and palms resting on the ground.
- Close the eyes.

Prone Relaxation Posture: Makarāsana

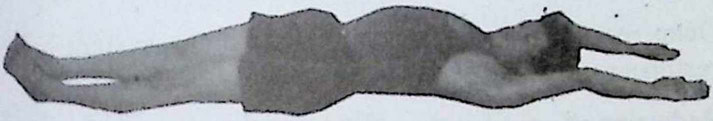
- Lie down on the abdomen with the feet wide apart, heels facing each other.
- Bend both the hands and place the right palm on the left shoulder and the left palm on the right shoulder.



- Rest the chin at the point where the forearms cross each other.
- Gently close the eyes.

Initial Supine Posture

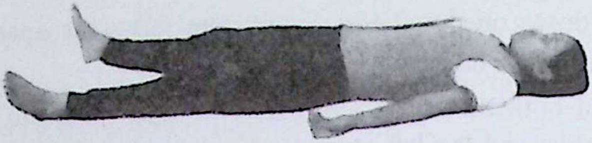
- Lie down on the back with legs together.



- Stretch the hands straight above the head, biceps touching the ears and the palms facing the ceiling.
- Close the eyes.

Supine Relaxation Posture - Śavāsana

- Lie supine on the ground with hands and feet apart.
- Slightly stretch the body and allow the whole body to relax completely with eyes gently closed.



- If your back hurts, bend the knees.
- Become aware of different parts of the body starting from toes to head. Feel the spread of relaxation in all parts of the body progressively.
- With regular long practice, the relaxation will become deeper, natural and spontaneous. Then the whole body is relaxed to the extent that one forgets the body. The mind experiences alertful rest.

Benefits of Śavāsana

a. Deep rest to all part of body reduces oxygen requirement. Hence the tissues are trained to remain healthy even when the chronic airway narrowing does not supply enough oxygen due to air trapping (emphysema) or collapse of air sacs (atelectaik)

b. Deep rest to nervous system and immune system helps in restoring normalcy.

c. Reduction of speed at the mind level (Manomaya Kośa), speed and constriction at prāṇa level (Prāṇamaya Kośa) helps in better mastery over uncontrolled speeded up nervous or immune responses (Annamaya Kośa).

B. BREATHING PRACTICES

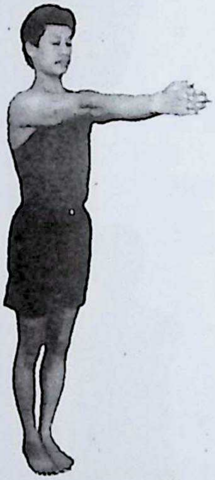
Standing Postures

1. Hands In and Out Breathing

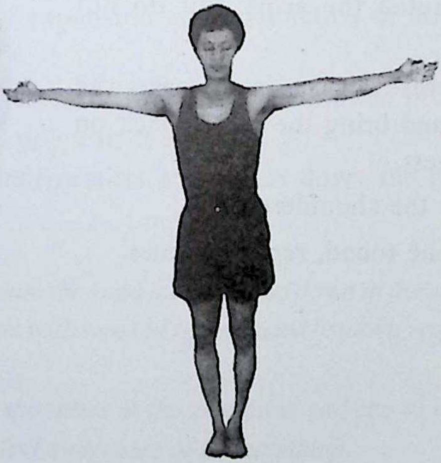
Sthiti: Tāḍāsana

PRACTICE

- Stretch out your arms in front, in level with your shoulders and bring the palms together.
- Inhaling spread your arms sideways in horizontal plane.



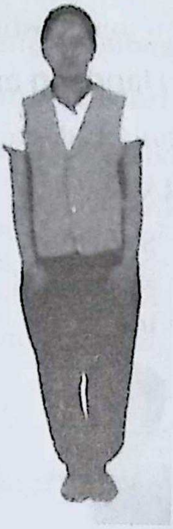
- While exhaling bring the arms forward with palms touching each other.
- Repeat 5 times, making your arm movements, continuous and synchronising with the breath flowing in and out rhythmically.
- Relax in Tāḍāsana. Feel the changes in the breath and the body, especially the arms, shoulders and the back of the neck.



2. Hands Stretch Breathing

Sthiti: Tāḍāsana

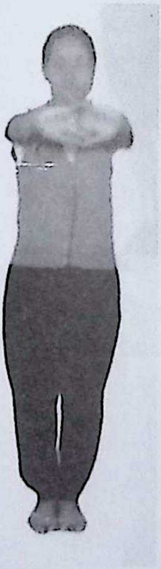
PRACTICE



- Stand erect with feet together (heels together and toes 4 to 6 inches apart) relaxed by the side of the body.
- Gently bring your hands in front of the chest.
- Interlock the fingers and place the palms on the chest.
- Collapse and relax your shoulders.
- Close your eyes.

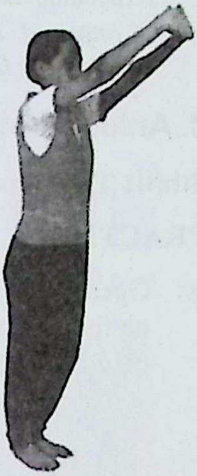
PRACTICE

Stage 1 : **(Horizontal)**

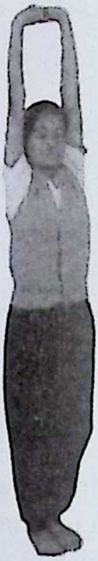


- While inhaling, stretch the arms straight out in front of your body so that the arms are at shoulder level.
- At the same time twist the hands so that the palms face outwards.
- Fully stretch the arms, but do not strain.
- Now, while exhaling reverse the process and bring the palms back on to the chest.
- Collapse the shoulders again.
- This is one round, repeat 5 times.

Stage II : (At 135^0)



- Repeat the same movements now stretching the arms above the forehead at an angle of 135^0.
- Repeat 5 times.



Stage III : (Vertical)

- Again repeat the same movements, this time stretching the arms vertically above the head.
- While moving up and down the palms close to the nose tip.
- Repeat 5 times.

Benefits

1 Helps in opening the lower, middle and upper zones of the chest for better mastery.

2 Deep internal linear awareness and concentration on balancing the body helps in bringing about prāṇa balance.

3 Awareness of the touch of air as it flows in and out.

4 Awareness of expansion and contraction of airways in these three sections.

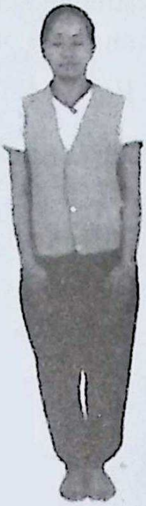
5. Trains the chest wall muscles for rhythmic breathing.
6. Balances the prāṇa in the chest.
7. Improves concentration and calms down the mind.

Note

- *In stage III while the arms move up and down in the same plane of the body the hands with crossed fingers need to move very close to the tip of the nose.*
- *Collapse the shoulders at the beginning and end of each cycle.*
- *Maintain perfect awareness of the breathing.*

- *Exhalation should be longer than inhalation.*
- *If required, it can be practised sitting in a chair too. Properly synchronize the breathing with hand movements.*

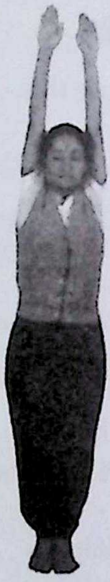
3. Ankle Stretch Breathing



Sthiti: Tāḍāsana

PRACTICE

- Open the eyes and fix your gaze on a point on the wall ahead. Place the palms on front of your thighs.



- While inhaling, raise your hands and stretch the ankles. Feel yourself growing taller and firm.
- As you exhale, bring your hands and heels down.
- Repeat 5 times keeping the movement of hands and ankles, continuous breathing in synchronization. Feel the stretch from your ankles up to finger tips as you reach upwards.
- Relax in standing position, hands by the side of the thighs. Observe your breath and enjoy the stability for a few seconds.

Benefits

a. This practice helps in breath awareness.

b. Awareness of exapansion and constriction of airways in mid zone of the lungs.

c. Strengthens the clavicular muscles.

d. Vertical stretch followed by relaxation improves the prāṇa balance the Candra and sūrya naḍīs.

e. Improves capacity to focus (dhārṇā).

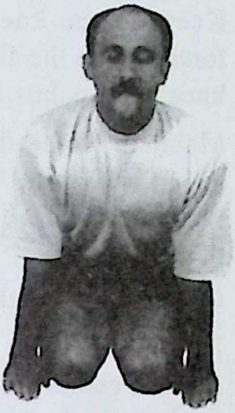
f. Relax the body, balance the prāṇa, calms down the mind.

Sitting Postures

4. Dog Breathing

Sthiti: Vajrāsana

PRACTICE



- Place the palms of the hands on the ground beside the knees.
- Make the spine slightly concave and fix the gaze straight ahead.
- The mouth is opened wide, the tongue is pushed out to its maximum. Practise rapid, forceful inhalation and exhalation, expanding and contracting the abdomen vigorously.
- Repeat the practice for 30 seconds.
- Relax in Śaśāṅkāsana.

Benefits

a. Full diaphragm contraction empties locked up air in the alveoli of the lower lobes.

b. Rapid exhalation cleanses the lower & middle portion of lungs by expelling carbon-dioxide trapped in the alveoli.

c. Awareness of airway in lower and middle zone helps in relaxing the bronchi.

d. Opens up prāṇa blocks and Calms down the mind.

Note

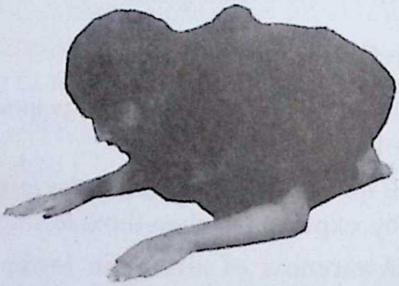
- *Since this dynamic nature of practice is a form of hyperventilation, epileptics and high blood pressure patients should avoid it.*

5. Rabbit Breathing

Sthiti: Vajrāsana

PRACTICE

- Keeping the knees together, bend forward and rest the forearms on the floor, keeping the elbows by the side of the knees and palms flat on the ground.
- Maintain the head at a distance of one hand length from the ground to chin. Open your mouth partially. Protrude the tongue partially. Touch the lower lip resting on the lower set of teeth.
- Gaze at a point about 2 feet on the ground in front of you.
- Pant quickly like a rabbit, using only the upper part of the chest. Feel the air moving beautifully in and out of the lungs. Feel the expansion and contraction of the chest muscles. Continue for 20 to 40 breaths.
- Close your mouth and relax in Sasankāsana. Stretch your hands forward with the forehead resting on the ground. Feel the relaxation of chest and thorax. Allow your breath to return to normal.



Benefits

a. One gets train in effortless rapid breathing that is necessary during acute episode of asthma.

b. Very good practice to develop awareness of the airways that is necessary for voluntary control.

c. Mastery over diaphragmatic breathing by voluntarily, increasing the speed of diaphragmatic movement.

d. Opens up the prāṇa blocks in the upper chest region.

e. A quick way to calm down the disturbed mind.

Note

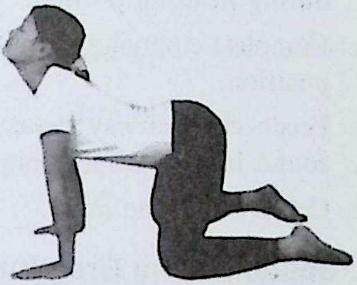
- *Breathe rapidly through the mouth only, using the thoracic muscles.*
- *Make sure that the abdomen presses on your thighs, preventing any abdominal movement.*
- *Do not drop your head on to the floor.*

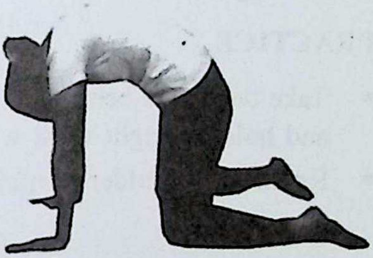
6. Tiger Breathing

Sthiti: Vajrāsana

PRACTICE

- Come to Vajrāsana.





- Lean forward and place the hands flat on the floor in line with the shoulders with fingers pointing forward. Arms, thighs and heels should be about one shoulder width apart. The arms and thighs are perpendicular to the floor.
- While inhaling raise the head and look at the ceiling.
- At the same time, depress the spine making it concave.
- While exhaling, arch the spine upwards and bend the head downward bringing the chin towards the chest.
- This constitutes one round of tiger breathing.
- Repeat 5 rounds.

Note

- *Before starting the practice ensure that you are comfortable while standing on "all-fours" (i.e., two hands and two knees).*
- *Co-ordinate the movements with breathing*

- *Keep the eyes closed and practise with awareness.*
- *Do not bend the arms or move the thighs forwards and backwards.*

Benefits

a. Awareness and mastery over all three sections of the chest wall (lower, middle & upper).

b Empties the lungs by actively squeezing out the air from all parts of the lungs; allows better aeration during the stretch.

c. Expansion and contraction of chest wall leads to harmonious functioning of muscles of respiration.

d. Awareness of expansion of airways in all zones of chest during head-up portion.

c. Complete emptying of all the air sacs and airways in the next position.

d. Feedback of airway status as you listen to the mild whistling sound from small and big airways.

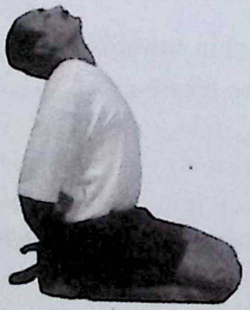
d. Calms down the mind.

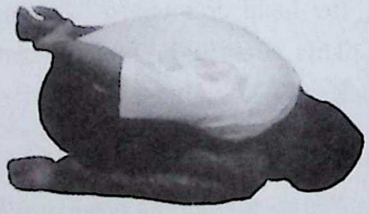
7. Śasāṅkāsana Breathing

Sthiti: Vajrāsana

PRACTICE

- Take the hands behind the back, make a fist of the right hand and hold the right wrist with the left hand.
- Relax the shoulders.





- While inhaling bend backwards from the waist opening up the chest.
- While exhaling slowly bend forward from the waist bringing the forehead on to the ground in front of the knees. Collapse the shoulders.
- While inhaling slowly come up to the vertical position and then slightly lean backwards.
- This forms one round.
- Continue ten rounds slowly.

Note

- *Keep the shoulders collapsed.*
- *You can separate the knees as per your comfort to avoid unnecessary pressure on the abdomen and chest.*
- *Synchronize breathing with movement.*
- *Keep your eyes closed and maintain breath awareness.*

Benefits

a Same as tiger breathing further passive compression

b. Expels air trapped in lower zone of lungs.

c. Trains in diaphragmatic breathing.

d. Releases prāṇa blocks.

d. Calms down the mind.

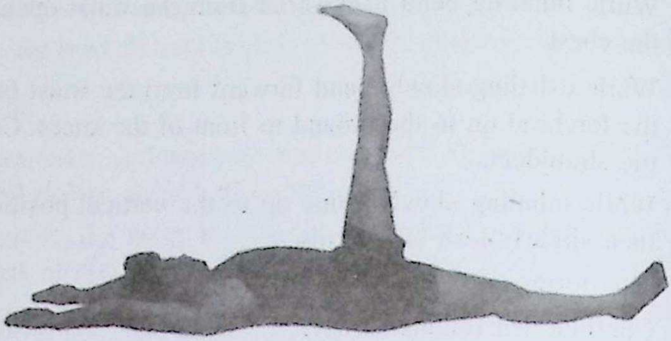
8. Straight Leg Raise Breathing

Stage I : Alternate legs

Sthiti: Supine Posture

PRACTICE

- While inhaling slowly raise the right leg without bending the knee, as far as comfortable (up to 90°, if possible).
- While exhaling return the leg to the floor as slowly as possible.
- Repeat the practice with the left leg.



- This is one round.
- Perform 10 times.

Note

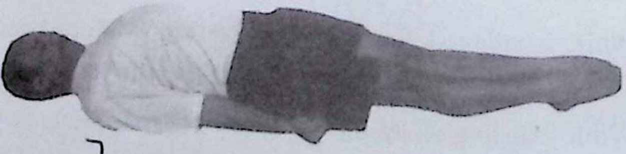
- *If you need, you can keep the arms by the side of your body with the palms facing the floor at any convenient position or at shoulder level.*
- *Do not bend the knee throughout the practice.*
- *Do not disturb the leg lying straight on the ground in order to be able to raise the other leg further.*

9. Instant Relaxation Technique(IRT)

Sthiti: Śavāsana

PRACTICE

- Bring your legs together; join the heels and toes together and place the palms by the side of the thighs.
- Keep the face relaxed with a smile all through the practice.



- Start tightening from the toes.
- Tighten the ankle joints, and calf muscles.
- Pull up the kneecaps.
- Tighten the thigh muscles.
- Compress and squeeze the buttocks.
- Breathe out and suck the abdomen in.
- Make fists and tighten the arms.
- Inhale and expand the chest.
- Tighten the shoulders, neck muscles and compress the face.
- Tighten the whole body from the toes to the head.
- Tighten'tighten'tighten'
- Release and let go the whole body instantaneously.
- Legs and arms go apart with the open palms facing the roof.
- Collapse the whole body.
- Enjoy the instant relaxation.

C. LOOSENING PRACTICES

(Śithilī karaṇa vyāyāma)

INTRODUCTION

A flexible and strong spine is believed to be mandatory for a healthy growth. Right from childhood if we can train our muscles holding the vertebral joints properly, a strong foundation is built to acquire a body with good stamina.

Positive health and not mere absence of abnormalities or diseases is the goal set by the World Health Organisation. The series of Śithilīkaraṇa Vyāyāma given here are meant to achieve this goal of a good physique by proper training of the muscles of the spine. They not only help in performing the āsanas better by loosening the joints but they also help in building up stamina and tolerance.

Śithilīkaraṇa Vyāyāma as the name indicates is loosening exercises performed normally with speed and repetitions. These dynamic practices are akin to conventional P.T. exercises except that most of these practices involve flexing of the spine.

The Principles of Śithilīkaraṇa Vyāyāma are to :

i. loosen the various joints in the body, and
ii. flex the spine, by repeatedly stretching and relaxing the different muscles.

The Objectives are to

a. remove lethargy and tardiness in the body,
b. develop the stamina of the body and
c. discipline the body-mind complex.

Special tips for beginners

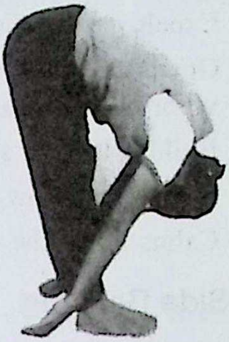
1. Practice the exercises stepwise.
2. Count the steps slowly and perform the same with attention.
3. Check the performance of each step before increasing the speed.
4. Learn to synchronise each step in a group.

5. Increase the number of repetitions depending on your capacity.

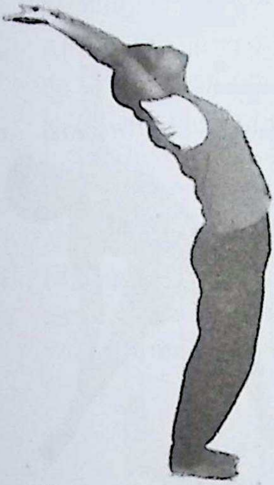
1. Forward and Backward Bending

Sthiti: Tāḍāsana

PRACTICE



- Stretch the arms straight above the head with the palms facing forward.
- Inhale and bend backwards with arms stretched above the head.
- While exhaling bend forward as much as possible.



- While inhaling come up and bend backwards and go on rapidly to forward bending with exhalation.
- Repeat 20 times with increasing speed.
- Gradually slow down and ultimately stop the practice.

Note

- *Start slowly and gradually increase the speed within your limits.*
- *You may also practise this while standing with legs apart when the arms will be moving between the legs.*
- *While bending forward do not let the hands touch the ground; swing them in the air backwards.*
- *Always bend from the lower waist.*
- *Make the movements free, easy and flowing.*

Benefits

a. Increased flexibility of spine gives the generalized feeling of well-being.

b. Vigorous exhalation empties trapped air. Trains in exercise tolerance prevents or cures exercise, induced asthma.

c. Exercise tolerance.

d. Expels phlegm from all air passages

e. Expels carbon-dioxide from air trapped sacs.

f. Opens up collapsed air sacs due to active inhalation with vigorous backward bending.

g. Builds physical stamina.

h. Allows free flow of prāṇa in nāḍīs.

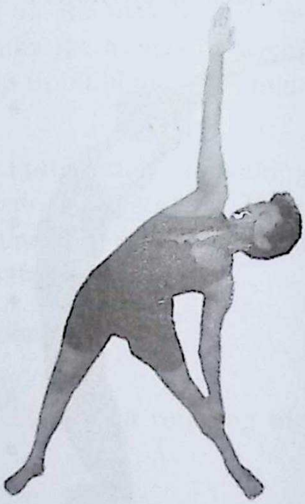
i. Calms down the mind.

2. Side Bending

Sthiti: Tāḍāsana

PRACTICE

- Keep the legs about one metre apart.
- Raise the hands sideways parallel to the ground while inhaling.
- Bend to the right till the right hand touches the right heel while exhaling. Bend in the same plane.
- Look at the palm of the left hand directing forwards.
- Come up with inhalation.
- Repeat 4 or 5 times to the right and left side alternate.
- Relax in Tāḍāsana.



Benefits

a. Exercise tolerance.

b. Opens up airways in middle lobes of lungs.

c. Expels carbon-dioxide and phlegm.

d. Free flow of prāṇa in Iḍā and Piṅgalā nāḍīs

e. Calms down the mind.

f. Strengthens the muscles of mid zone of chest and the mid back. This prevents exhaustion during labored breathing during an attack or during exercise .

g. Empties the air sacs in mid and upper zone.

h. Promotes better air movement (ventilation) in the air sacs in middle lobe.

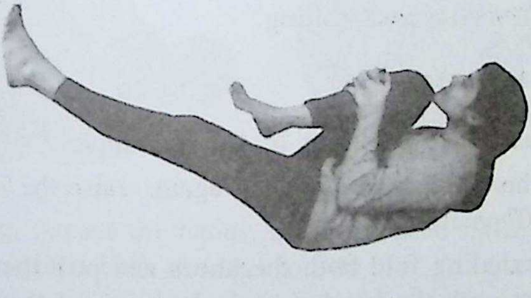
3. Pavanamuktāsana Kriyā

Stage I : **Leg Rotation**

Sthiti: Supine Posture

PRACTICE

- While inhaling raise the right leg up to 45^0 position, without bending the knee. Keep the left leg firm on the ground.
- At 45^0 exhale and again while inhaling raise the leg further up to 90^0 position.
- Now while exhaling, bend the right leg at the knee and pull the right knee towards the chest with the hands (fingers interlocked) and lift the head simultaneously and place the chin on the right knee. Normal breathing.
- Maintain and lift the left leg and rotate five rounds clockwise and five rounds anti-clockwise without bending the knee with normal breathing.



- Then lower the left leg to the ground.
- Now while inhaling release the hands, bring the head back on to the ground and straighten the right leg.
- While exhaling lower the right leg to 45^0 position.

- Here inhale and while exhaling again lower the right leg further down to the ground. Relax for a while.
- Repeat the same practice on the left side.

Note

- *While rotating the leg, try to draw as big a circle as possible in the air.*
- *Maintain the compression around the abdomen to have the best results.*
- *Here, the leg is raised to 90° position with two inhalations and similarly lowered on to the ground with two exhalations.*
- *Do not bend the leg at the knee, which is being rotated.*

Benefits

a. Improve digestion.

b. Releases abdominal gas dexterous which in turn can cause great discomfort in an asthmatic.

c. Pavana muktasana releases all the gases accumulated in the 32 feet long small and large intestines, thus improving the digestion.

d. Better appetite and assimilation through better blood flow to digestive system.

e. Prevents constipation.

f. Shifts prāṇa blocks from udāna and mukhaprāṇa (that causes asthma and nasal allergy) by activating samāna.

Stage II : Rocking and Rolling

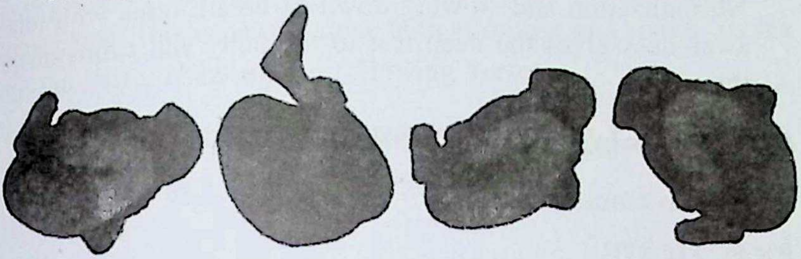
Sthiti: Supine Posture

- Inhale and raise both legs to 45° position
- Exhale here and while inhaling again, raise the legs further up to 90° position.
- While exhaling fold both the knees and pull them towards the chest with the hands interlocked around the knees and place the chin on the knees.
- Normal breathing.

PRACTICE

a. Rocking

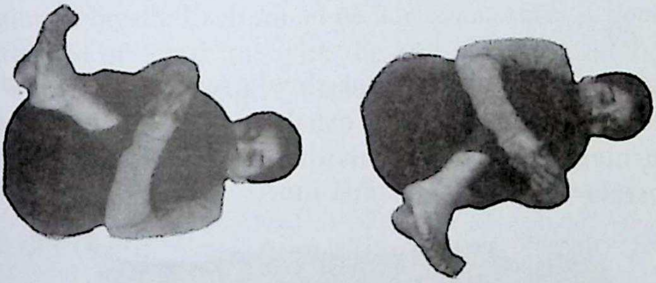
- Rock the body forwards and backwards 5 to 10 rounds.
- While rocking forward, try to stand on the feet and while rocking backward, feel the nice massage to the spine.



- Relax for a while in the same position and go on for rolling.

b. Rolling

- Roll the entire body to the right until the right elbow touches the ground.
- Then roll to the left until the left elbow touches the ground.
- Repeat this rolling alternately to the right and left 5 rounds.
- Stop the movement.



- Inhaling, release the hands, bring the head on to the ground and straighten both the legs to 90^0.
- While exhaling, lower the legs slowly to 45^0 position.
- Inhale here and while exhaling again lower the legs further down till the legs are on the ground.
- Relax in Śavāsana.

Benifits of Loosening practices

a. Rocking and Rolling in the final posture also helps in improving back muscle stamina and that contributes to improve the posture and exercise capacity.

b. Increases the oxygen concentration in the blood.

. Normalization and slowing down of breath done with total awareness gives the deep rest to the body and calms down the mind.

4. Quick Relaxation Technique (QRT)

Sthiti: Śavāsana

PRACTIC87E

Phase I

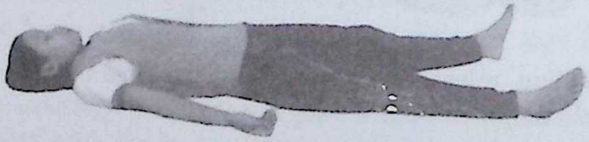
- Feel the abdominal movements.Observe the movements of abdominal muscles going up and down as you breathe in and out normally. Observe 5 cycles.

Phase II

- Synchronize the abdominal movements with deep breathing. The abdomen bulges up with inhalation and sinks down with exhalation. Observe 5 cycles.

Phase III

- As you inhale deeply and slowly, energize the body and feel the lightness. As you exhale completely collapse all the muscles, release the tension and enjoy the relaxation. Observe 5 cycles.



- Chant 'AAA' in a low pitch while exhaling. Feel the vibrations in the lower parts of the body.
- Slowly come up from either the right or the left side of the body.

HARMONISE AND RELAX

SŪRYANAMASKĀRA सूर्यनमस्कार : (Salutations to Sun)

Sūryanamaskār combines Yogāsanas and Prāṇāyāma. It comes inbetween Śithilīkaraṇa Vyāyāma and Yogāsanas. It brings about the general flexibility of the body preparing it for Āsanas and Prāṇāyāma. This is usually done both at sunrise and sunset, facing the Sun, after chanting the following verse:

हिरण्मयेन पात्रेण सत्यस्यापिहितं मुखम् ।
तत् त्वं पषन्नपावृणु सत्यधर्माय दृष्टये ।।

।। ईश उप।।

Hiraṇmayena Pātrena Satyasyāpihitam Mukham
Tat tvam Pūṣan Apāvṛṇu Satya Dharmāya Dṛṣṭaye

Meaning: Like a lid to a vessel, O Sun, your golden orb covers the entrance to Truth. Kindly open thy entrance, to lead me to truth.

There are mainly two modes of performing Sūryanamaskāra. In one, there are 12 steps or counts and in the other only 10 in each round. Each stage of Sūryanamaskāra is accompanied by regulation of breath. Each round of Sūryanamaskāra is done after the utterance of 'Omkāra' with the appropriate 'Bīja mantra', along with the corresponding name of Sun God in the following sequence:

1.	ॐ ह्रां मित्राय नम:	Aum Hrām Mitrāya Namaḥ
2.	ॐ ह्रीं रवये नम:	Aum Hrīm Ravaye Namaḥ
3.	ॐ ह्रूं सूर्याय नम:	Aum Hrūm Sūryāya Namaḥ
4.	ॐ ह्रैं भानवे नम:	Aum Hraim Bhānave Namaḥ
5.	ॐ ह्रौं खगाय नम:	Aum Hroum Khagāya Namaḥ
6.	ॐ ह्र: पूष्णे नम:	Aum Hraḥ Pūṣṇe Namaḥ
7.	ॐ ह्रां हिरण्यगर्भाय नम:	Aum Hrām Hiraṇyagarbhāya Namaḥ

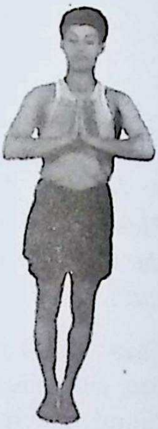
8. ॐ ह्रीं मरीचये नमः	Aum Hrīm Marīcaye Namaḥ
9. ॐ ह्रूं आदित्याय नमः	Aum Hrūm Ādityāya Namaḥ
10. ॐ ह्रैं सवित्रे नमः	Aum Hraim Savitre Namaḥ
11. ॐ ह्रौं अर्काय नमः	Aum Hroum Arkāya Namaḥ
12. ॐ ह्रः भास्कराय नमः	Aum Hraḥ Bhāskarāya Namaḥ

5. Sūryanamaskāra

Sthiti: Tāḍāsana

PRACTICE

- Stand erect with legs together. Bring the palms together to namaskāra mudrā.



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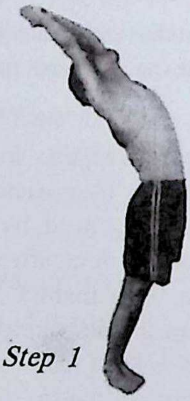


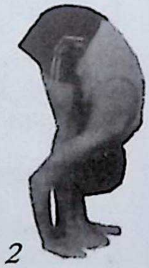
Step 1

Step 1

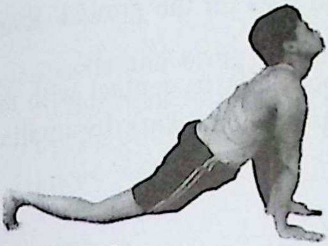
- Take the hands above the head while inhaling and bend the trunk backwards.

Step 2

- Bend the body forward while exhaling. Touch the forehead to the knees.
- Keep the palms on the floor on either side of the feet.



Step 2

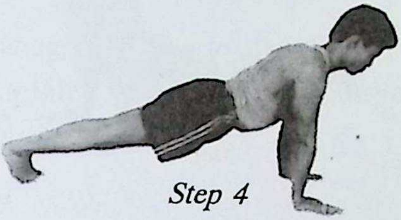


Step 3

Step 3

- In this step breath in and kick the right leg back.
- Push the buttock forward and downward so that the left leg is perpendicular to the ground.
- Look up.

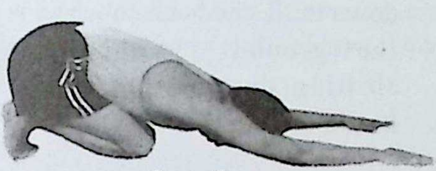
Step 4



Step 4

- In this step, exhale and take the left leg also back, resting only on palms and toes. Keep the body straight from head to toes inclined to the ground at about 30^0.
- Take care to keep the neck in line with the back.

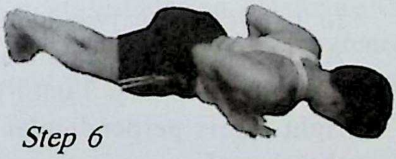
Step 5



Step 5

- While inhaling, bend the legs at the knees and rest them on the floor with buttocks resting on the heels without altering the position of the palms and toes.
- Exhale as you rest the forehead on the floor.
- Then relax in normal breathing.

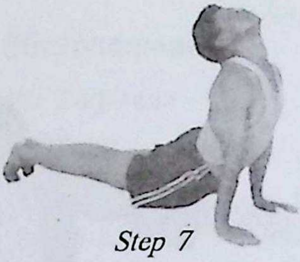
Step 6



Step 6

- While exhaling without shifting the positions of hands and toes, glide the body forward and hold the breath (Bāhya kumbhaka) and rest the forehead, chest, hands, knees and toes on the ground. Raise the pelvis off the ground.

- Note that eight points of the body are in contact with the ground - hence the name sāṣṭāṅga namaskāra (Salutation with eight parts).



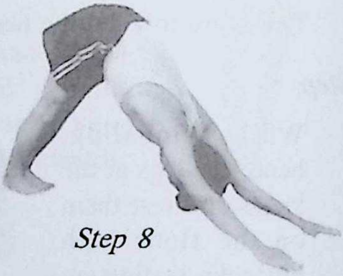
Step 7

Step 7

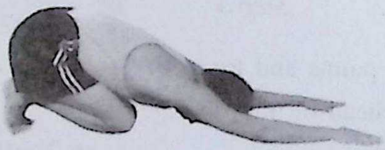
- Inhale, raise the head and trunk making the spine concave upwards without lifting the position of the hands and feet.
- Arch the back as far as you can until the elbows are straight.
- Keep the knees off the ground.

Step 8

- While exhaling, raise the buttocks, push the head down until the heels touch the ground without shifting the position of hands and feet.



Step 8



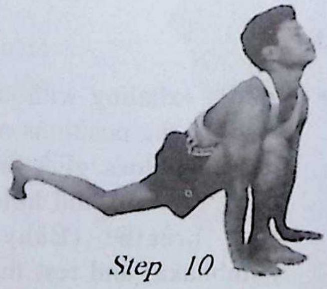
Step 9

Step 9

- Same as step 5.

Step 10 :

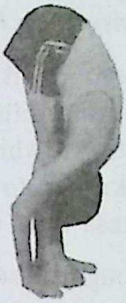
- Inhale and bring the right leg in between the two hands. Arch the back concave upwards as in step 3 until the right leg is perpendicular to the ground.



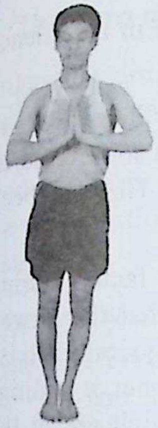
Step 10

Step 11

- Exhale and bring the left foot forward next to the right foot and reach down with your upper body to touch the forehead to the knees as in step 2.



Step 11



Step 12

Step 12

- While inhaling, come up to sthiti.
- This completes one round of Sūrya Namaskāra. Repeat 3 rounds.

Note

(In 10-stages- Sūryanamaskāra the 5^{h} and 9^{h} stages are omitted).

The prolonged pronunciation of 'Omkāra' followed by the Bīja akṣara, 'Ha' and the sounds 'R' `M' which come in every Mantra influences and stimulates the nerve centers in the brain corresponding to the respiratory, circulatory and digestive systems, make them more active, efficient and healthy.

Benefits

Combines the practices at all the three Kośas. Annamaya Kośa where the imbalances are manifest. Body movements, 12 different complimentary postures to strengthen, master, and relax the muscles in all part of the body, opens up the chest. Trains in rhythmic contraction and relaxation of respiratory muscles. Helps in awareness of involuntary muscles of bronchus.

Prāṇamaya Kośa

Breathing combined with each posture helps in balancing the prāṇa; releasing prāṇa blocks in all branches of naḍīs; Awareness of prāṇa in different parts of body prepares for better mastery and slowing down.

Manomaya Kośa

Devotion and surrender to the Lord Sun prepares the mind for emotion culture and slowing down of the speeded up loop of emotions, which is a common feature of asthmatics. Asthmatics are known to be emotionally hypersensitive with mobility to express their emotions.

Through these practices one learns to settle down in the silence of the Ānanadamaya kośa.

Exercise is one of the well-known triggers for asthma. Both in children and adults. This could be the only trigger in some children (Exercise Induced-Asthma (EIA)). The reason for. EIA has been worked out.

After a long search for various physical, chemical factors during exercise that may cause asthma, it is now clear that the airway drying due to rapid breathing during strenuous physical exercise is responsible for triggering the parasympathetic nerve endings in bronchi. Hence yogic loosening exercises which are in the form of strenuous physical muscular activities are useful in retraining the airways to tolerate the dryness that goes with the panting mouth breathing after any exercise. The Yogic Śhithilīkaraṇa vyāyāma which is carried out under close supervision is characterized by systematic graded stimulation immediately followed by deep rest and relaxation. If you develop a mild wheeze during the practice, stand still listen to the whistling internal noice & use the sound as an internal feedback to send messages of relaxation and expansion to those airways where the wheeze is arising. Thus loosening exercises performed with jerks, and stiffness are useful in desensitization of an asthmatic to exercise.

Exercise also helps in opening up the prāṇa blocks in nasal allergy.

For example persons with blocked nose can open up nostril within two minutes by spot jogging as it activates the sympathetic nerves system.

7

YOGĀSANAS

a. The two schools of Yogāsanas

Yogasanas are specialised postures of the body often imitating many of the animal postures. Large number of Āsanas exist. The same āsana is often named differently and performed in various modes by different schools in our country and abroad. All these are permutations and combinations of the two basic types of Āsanas.

Type 1: Dynamic type of Āsanas of the Haṭha yoga

Type 2: Relaxing type of Āsanas performed on the principles laid down by Patañjali in his Yoga aphorisms.

The first school utilises speed, repetitions, maintainence with strength (Isometric) and often jerks in the mode of performance. The second, Patañjali system, emphasizes on mental equipoise through relaxation, and effortlessness. Maintenance for longer duration with ease is the key factor in this second school. The objective of the first school is predominantly to shatter the laxity, lethargy and Tamas in general. By repetitions and quick actions it develops the strength of the muscles and the stamina of the organs and systems in the body. These aid the growth process. It is this system that we have chosen in the formative and developmental phases of students. Relaxation, slow breathing and calming the mind which form the triplet of Yoga featured in the Patañjali Yoga lore is adopted in the later years of man (above say 18 years) where the normal growth of the physical frame would be almost complete. It is here that energy channelisation, and conservation processes are harnessed and the overshoots and imbalance of the bodily functions are controlled. The real contribution of Yoga to modern world is found at this level. It is this system that we have described in this chapter.

(i) Dynamic Āsana

As the name implies, the characteristics of this system of Yogāsanas are energising movements with speed and repetition. While the physical exercises (Non-yogic) are effective on muscular, circulatory and respiratory systems, the Yogic exercises have an effect on the nervous and glandular systems as well. The Dynamic Yogāsanas stimulate the nervous and glandular systems resulting in evocation of energy. This energy combats laziness by shattering Tamas and gives rise to Rajas (activity). This particular system is recommended for children as well as people who are lethargic. The Sūryanamaskāra and Śithilīkaraṇa Vyāyāma can be included in this system of dynamic Yogāsanas as it is a combination of different āsanas, and involves speed.

(ii) Relaxing Āsana

The aim of this system is to develop an inner awareness and unfold the higher levels of consciousness. Movement without jerks and effortless maintenance characterise this system. This results in strength and forbearance-*titikṣā*. There is also a proportionate growth of the body. The control of food and other Yamas and niyamas are common to both systems. While the non-yogic exercises and dynamic Yogāsanas affect expenditure of energy and perspiration, the Yogāsanas based on Patañjali's aphorisms result in deep relaxation and energy conservation, resulting in freshness. This is basically a nerve culture as it calms down the nerves.

The features of yogāsanas are summarised below :

i. Evoking the dormant potentiality in man is the goal.
ii. To raise man from his animal nature to normalcy and raise him further up the steps to achieve the goal of total freedom.
iii. Flexibility of spine is aimed at.
iv. Emphasis on positive health and overall personality development is given.
v. Mental equipoise, Prāṇic balance and physical stamina are the outcome.

b. Physical Exercises and Yogic Practices

From time immemorial man is trying to be free from disease and make his body handsome; make it strong and ultimately make it immortal. The search for the fulfilment of these desires brought about the development of physical culture where various types *of* exercises are employed. Exercises can be broadly classified into two types (i) passive, and (ii) active. Under passive type, we have massage and manipulation of muscles by others, where the beneficiary is passive. Whereas in the active type, we have exercises emphasizing on different characteristics, which are enumerated below.

Strength : Body building and weight lifting utilizing the implements like bar-bells, dumb-bells and also vigorous exercises like pull-ups and push-ups etc.The practices may involve moving the joints (isotonies) or tighten, the muscles without changing the joint position (Isometrics).

Speed : Sports, athletics, etc.

Dexterity : Aerobatics, gymnastics, archery, fencing, boxing, etc.

Endurance : walking, hiking, swimming, etc.

The common features of all these non-yogic type of exercises are that they involve speed, jerks and repetition. They are energy expending processes, resulting in strengthering of the muscular and circulatory system. Any of these practices can be used for manintaining good physical health or as a sport. The attitude of competition, showmanship and materialistic gain often develops arrogance, tensions, etc., Physiotherapy predominantly adopts these physical exercises and movements to treat several ailments connected with muscles, joints, nerves and other systems.

c. Stages in Yogāsana

Most people are of the opinion that Yogāsanas are meant for keeping the body fit and healthy. In other words they limit the āsanas to physical exercises. It is just like going to a millionaire and asking for a rupee!

'Āsanas' form one 'aṅga' or limb of Patañjali's eight-limbed Yoga. This means that he has introduced it with a specific purpose of utilizing the physical body, which is visible and gross, to develop an inner awareness and thus reach higher consciousness. Yogāsanas help us to develop forbearance because of maintenance. While maintaining, we go through three stages which are Sthira, Cira and Sukha.

Initially, the posture is shaky. A beginner cannot reach the final posture immediately. After gradual practice he reaches and achieves steadiness and this stage is called *'Sthira'*. In this stage, however he is not able to maintain it for the prescribed length of time due to the effort involved. When he withdraws the effort by relaxation (*Prayatna-Śaithilya*) as per the suggestion of Patañjali in the first half of his Aphorisms (2.47), He reaches the stage ***'Cira'*** in which he is able to maintain it for the prescribed length of time. The mind control begins here. In 'Sthira' the mind gets concentrated on the process of maiantaining the final posture. As the posture becomes effortless and natural, the mind according to its nature starts wandering. To avoid this Patañjali gives us a method in the next half of the same sūtra (2.47) "Ananta-Samāpatti" or contemplation on the infinite. Here the word 'Ananta' can be interpreted as the chosen deity, or the chosen sound (Mantra) or just expansiveness. When this is done the mind calms down and as it stays in silence it starts experiencing the bliss and this stage is called as 'S*ukha*'. Patañjali defines the nature of Āsana in the previous Sūtra (2-46) viz: *'Sthira-Sukham Āsanam': Posture should be steady and comfortable.* The Sukha stage is comparable to Dhyāna. If the posture is 'Sukha' for an appreciably long time (subjectively varient) the person enters 'Āsana Siddhi' which is the super-conscious state or 'Samādhi'. This is given by the subsequent sūtra (2.48) 'tato dvandvānabhighataḥ': *From that (mastery of the posture) no assaults from the pairs of opposites.* This is how we derive infinitely more than just the physical benefits.

D. An Ideal Healthy Body

All attempts of Kamsa to kill Kṛṣṇa had failed. He hits upon a brilliant plan of which he is sure of success. He hosts a carnival of fun and games to which he invites all people including Kṛṣṇa as well as Balarāma. The obstacles are cleverly spaced from the main gate onwards. A rogue elephant attacks Kṛṣṇa and he kills it. Finally, the court wrestler Cānūra challenges Kṛṣṇa and the wrestling bout is very beautifully described in Srimad Bhāgavat. Cānūra is described as 'a man-mountain' with very heavy body having rippling muscles exhibiting strength in every way. The gestures, facial expressions are also given. He is said to be tense, stiff, straining every muscle with an angry face. Contrary to it Kṛṣṇa*'s* body is described as, well proportioned with a balanced growth, agility, capable of great speed in movements, having good reflexes and highly flexible. Komala (petal soft) but stone hard when situation arises and naturally relaxed during action due to lack of strain. His psychology is also very congenial; his face is always smiling as if he is ready for a sport; very keen observation due to tranquility of mind and clarity of thought. He keenly observes the 'man-mountain' and notes that he has a slight limp on the right leg probably due to an injury in a past fight. When the fight begins, Kṛṣṇa fights effortlessly and wins by using the strength of Cānūra on himself.

This gives us the characteristics of an ideal body:

1. Balanced and harmonious growth,
2. Great speed in movement due to agility,
3. Highly flexible,
4. Komala but stone hard when the need arises,
5. Relaxation in action and hence conservation of energy, and
6. Tranquility of mind and clarity of thought, i.e., harmony of body and mind.

These characteristics can be achieved with the persistent and regular practice of Yogāsanas.

These effects of Yogāsanas described in yoga texts indicate that Yogāsanas not only work on the Annamaya Kośa, but operate in tune with bringing stability and harmony in other Kośas also.

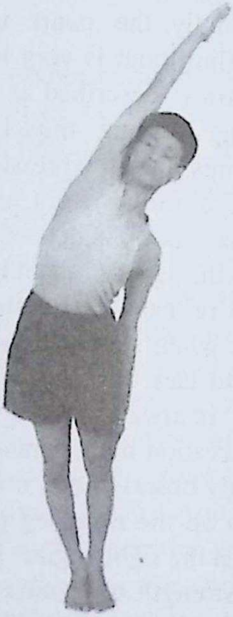
PRACTICE OF YOGĀSANAS AND RELAXATION

Standing Postures

1. Ardhakaṭi Cakrāsana

Sthiti: Tāḍāsana

TECHNIQUE



- While inhaling, slowly raise the right arm side ways up.
- At the horizontal level turn the palm upwards.
- Continue to raise the arm with deep inhalation vertically until the biceps touches the right ear, palm facing the left side.
- Stretch the right arm upwards.
- While exhaling bend the trunk slowly to the left.
- The left palm slides down along the left thigh as far as possible.
- Do not bend the right elbow or the knees.
- Maintain for about a minute with normal breathing.
- Slowly while coming back to vertical position inhale and stretch the right arm up. Feel the pull along a straight line from the waist upto the fingers.
- Bring the right arm down as you exhale to Sthiti position.
- Come back to Tāḍāsana Sthiti.
- Repeat on the left side, by bending towards the right side.

Note

- *Bend laterally. Do not bend either forwards or backwards.*

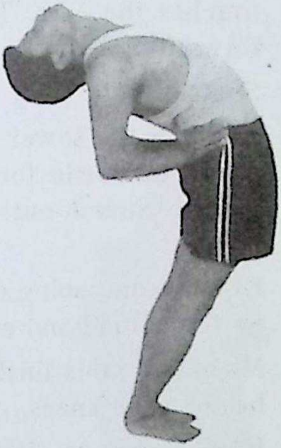
Benefits

1. Reduces fat in waist region, stimulates sides of the body.
2. Opens up the airways in the mid zone of the lungs.
3. Annamaya Kośa: Relaxation in final posture helps in awareness and sensitization of the bronchial caliber to prepare for better internal sensory feedbacks.
4. Prāṇamaya Kośa: Balances prāṇa in Iḍa and Piṅgala nāḍīs.
5. Manomaya Kośa: slows down and expands the mind.

2. Ardha Cakrāsana

Sthiti: Tāḍāsana

TECHNIQUE



- Support the back at the waist by the palms, fingers pointing forwards.
- Inhale and bend backwards from the lumbar region. Drop the head backwards, stretching the muscles of the neck.
- Maintain for a minute with normal breathing.
- Return to Sthiti.
- Relax in Tāḍāsana.

Benefits

Makes the spine flexible, stimulates the spinal nerves, promotes circulation of blood into head. Strengthens the neck muscles. Expands chest and shoulders. Improves breathing, Calms down the mind.

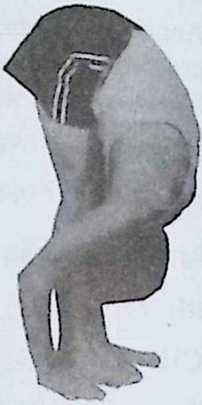
Limitations

Persons with problems of vertigo have to avoid this posture.

3. Pāda Hastāsana

Sthiti: Tāḍāsana

TECHNIQUE



- Stand erect with legs together.
- Inhale slowly and raise the arms sideways.
- At this horizontal level, turn the palms upwards.
- Continue to inhale and move the arms upwards until the biceps touches the ears. Turn the palms forward.
- Stretch up the body from the waist.
- Keeping the lower back concave, exhale and bend forward until the trunk is parallel to the ground. Stretch out the shoulders at horizontal plane and inhale.
- Exhale while going down further until the entire palm rests on the ground and chin touches the knees.
- Maintain in this final posture for about 2-3 minutes without bending the knees.
- Inhale, come up slowly to the vertical position and stretch the arms above the head.
- Exhale, drop down the arms, turn the palms downwards at the horizontal position.
- Continue to exhale and return to Sthiti.
- Relax in Tāḍāsana.

Note

- *Never bend the knees.*
- *Keep the neck up until the forward bending at the hip and the waist is completed and then drop the neck freely down to touch the chin to knees.*

Benefits

Makes the Spine flexible, Strengthens the thighs. Helps preventing constipation and menstrual problems. Improves digestion. Enhances blood flow to the head region, Empties the lower air sacs of trapped air, Opens up clogged small airways, Shifts prāṇa blocks. Calms down mind.

Limitations

People with severe degree of hypertension, cevical spondylosis, and disc prolapse to avoid this posture.

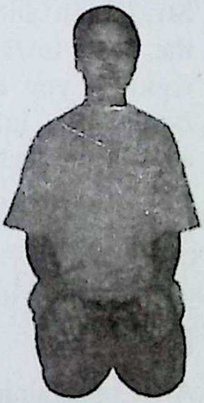
Sitting Postures

4. Vajrāsana

Sthiti: Daṇḍāsana

TECHNIQUE

- Fold the right leg and bring the right heel under the right buttock.
- Sitting on the right heel, fold the left leg and bring the left heel under the left buttock.
- Sit erect comfortably with the buttocks resting on both the heels and palms resting on the thighs.



Note

- *In the final posture the soles of the feet face upwards, heels are kept together and the entire weight of the body is felt on the back of the feet.*

Benefits

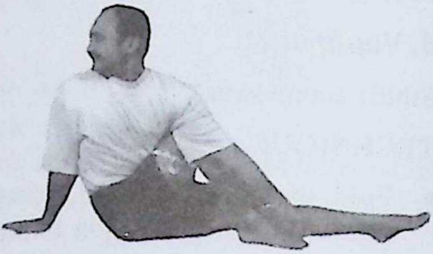
- A Meditative posture as we can sit comfortably for a long time with erect spine.
- Sitting relaxed with spine erect is a prerequisite for a balanced both nostril breathing an indicator of Suṣumna

nāḍī functioning. Opening the suṣumna nāḍīs is one the major aims of yoga practices. Since this indicates a state of perfect health free from asthma or any other illness. Hence this posture prepares you for subtler practices of prāṇāyāma and mediation to move towards normalization of hyperactive (speeded up excited erratic) immune and autonomic nervous system.

5. Vakrāsana

Sthiti: Daṇḍasana

TECHNIQUE



- Bend the right leg at the knee and place it beside the left knee.
- Straighten and twist the waist towards the right as you exhale. Bring the left arm around the right knee and catch the right big toe.
- Take the right arm back and keep the palm on the ground in such a way that the trunk is kept erect with a proper twist.
- After maintaining for about a minute with normal breathing return to sthiti and relax for a while in Śithila Daṇḍāsana.
- Repeat the same on the other side.

Benefits

Lateral twist gives flexibility to the spine, tones up the spinal nerves. Prepares the spaine for Mātsyendrāsana. Helps to cure constipation and dyspepsia. Improves lung capacity.

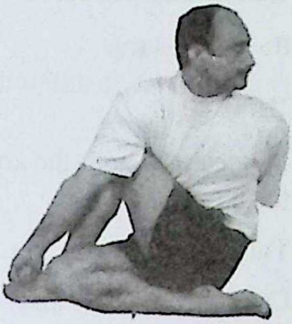
Limitations

People who have recently undergone abdominal surgery may avoid.

6. Ardha Matsyendrāsana

Sthiti: Daṇḍāsana

TECHNIQUE



- Bend the right leg at the knees by drawing it along the ground.
- Place the sole of the right foot against the inner side of the left thigh.
- Keep the right heel about 4 to 5 inches away from the perineum.
- Bend the left knee and place the left foot on the outer side of the right thigh near the right knee.
- Do not sit on the heels.
- Inhale, raise the right arm up vertically and stretch up the shoulder.
- Exhale, twist the waist to the left and bring the right arm over onto the outer side of the left knee. The left knee acts as a fulcrum for getting maximum twist of the spine. Catch the left big toe with the right hand. The right triceps rests on the outer side of the left knee.
- Now take the left hand behind the back and try to touch the right thigh.
- Look back over the left shoulder keeping the trunk erect.
- Maintain for about a minute with normal breathing.
- Come back to Sthiti.
- Relax for a while in Śithila Daṇḍāsana.
- Repeat the same, on the other side.

Benefits and Limitations

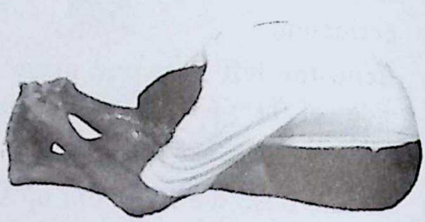
This is an improvement over the degree of spinal twist of vakrāsana and hence the same benefits are enhanced. Merging in a feeling of expansion (Ananta Samāpatthi) is the key to open up the bronchial airways.

7. Paścimottānāsana

Sthiti: Daṇḍāsana

TECHNIQUE

- Inhale, raise both the arms sideways at shoulder level parallel to the ground.
- Turn the palms facing upwards.
- Continue to inhale and raise the arms further up vertically biceps touching the ears and stretch the trunk from the coccyx region. Now turn the palm forwards.



- Exhale, bend the trunk forwards from the lower back. Stretchy the arms, hands parallel to the ground.
- Exhale completely, form hooks of index fingers and catch hold of the big toes. Bend the back further forward from the lumbar-sacral region so that the trunk is stretched along the thighs and the face rests on the knee. Bend the hands at the elbow and relax the abdomen muscles.
- Maintain the position for about a minute with normal breathing.
- Return to sthiti reversing the steps and the breathing
- Relax in Śithila Daṇḍāsana.

Note

- *Do not allow the knees to bend.*

Benefits

Gives flexibility to the back bone. Stimulates the spinal nerves and back muscles. Improves digestion, Energises the whole body. Removes constipation.

Limitations

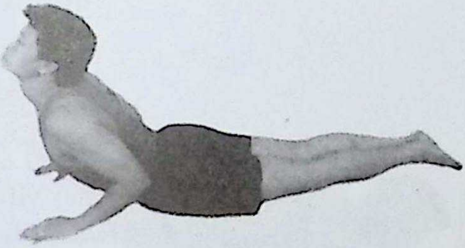
People with heart ailments, back problems and spondylosis should avoid this posture.

8. Bhujañgāsana

Sthiti: Prone Posture

TECHNIQUE

- Bend the arms at the elbows and place the palms beside the lower chest at the level of the last rib exerting least pressure on the palms.
- Keep the elbows close to each other and let them not spread out.



- Inhale and come up.
- Arch the dorsal spine and neck backwards as far as you can.
- Keep the body below the navel in touch with the ground.
- Maintain the final position with normal breathing for one minute with least pressure on the palms.
- While exhaling come back to sthiti position.
- Relax in Makarāsana.

Benefits

Brings flexibility to the dorsal spine. Strengthens the spinal muscles. Reduces the abdominal fat. Useful in management of bronchial problems and back problems.

Limitations

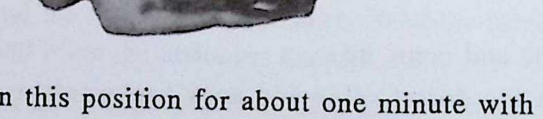
Those who have undergone the abdominal surgery may avoid this Āsana for 2 months. Proceed cautiously in cervical spondylosis.

9. Śalabhāsana

Sthiti: Prone Posture

TECHNIQUE

- Make fists of your palms with the thumbs tucked in and place them under the thighs, with back of the hands towards the ground.
- While inhaling raise both the legs up as far as comfortable without bending the knees.



- Maintain this position for about one minute with normal breathing.
- Come back to Sthiti position while exhaling.
- Relax in Makarāsana.

Note

- *Pull up the knee caps and squeeze the buttocks to improve the posture.*

Benefits

a. The forward stooping of an asthmatic is due to lack of strength in the spinal muscles. Hence the practice of Bhujaṅgā, Śalabhā and Dhanurāsanas help in strengthening the spinal muscles which in turn corrects their posture.

b. Bhujaṅgāsana for the upper dorsal and neck muscles, śalabhāsana for the lower dorsal and lumbar muscles and dhanurāsana for the entire spine.

c. Śalabhāsana also helps in releasing the phlegm from the air-ways in the lower zone of the lungs.

d. Balances the prāṇa. Tones up the kidneys and hip muscles. Reduces fat on thighs and buttocks

Limitations

Cardiac patients and diabetics may avoid this posture.
Proceed cautiously in low back pain.

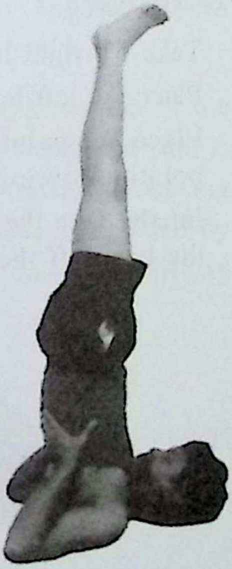
Supine Posture

10. Sarvāṅgāsana

Sthiti: Supine Posture

TECHNIQUE

- Inhale, raise the legs together slowly and gracefully (without bending the knees) till it forms about 45° to the ground.
- Continue to inhale and raise the legs further to 90° position. Bring the arms down and place them next to the buttocks.
- Exhale, raise the buttocks and the trunk, taking support of the arms and elbows, without lifting the head. Rest the elbows on the ground firmly and support the back with both palms.



- While retaining the legs parallel to the ground, straighten the trunk by pushing it with the hands untill the chin is well set in the suprasternal hollow.
- Inhale and raise the legs vertically keeping the body erect and come to the final shoulder stand position.
- Maintain effortlessly with normal breathing for about 2-3 minutes. Carefully avoid all jerks.
- Slowly come back to Sthiti and relax in Śavāsana.

Benefits

a. Cleans the airways in lower zone
b. Balances the prāṇa, Calms down the mind
c. Improves posture by reducing dorsal kyphosis

Limitations

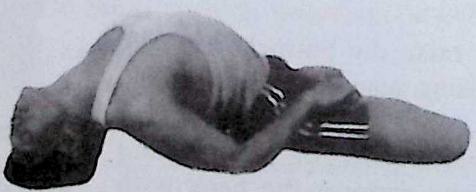
People with Cervical spondylosis, low back pain and hypertension should not do this posture.

11. Matsyāsana

Sthiti: Supine Posture

TECHNIQUE

- Take the right leg and place it on the left thigh.
- Place the left leg on the right thigh as in Padmāsana.
- Place the palms on either side of the head with fingers pointing towards the shoulders.
- Inhale, take the weight on the palms and lift the head and the back off the ground.



- Bring the center of the crown of the head to the ground by bending the dorsal and cervical spine backwards.
- Exhale and remove the hands after the weight is well balanced on the head and catch hold of the big toes hooking the index fingers around them.
- Press the elbows on the ground to bear the weight of the upper half of the body.
- Maintain this position for one minute with normal breathing.
- As you exhale come back slowly step by step to supine sthiti.
- Relax in Śavāsana.

Benefits

a. Complementary to Sarvāṅgāsana, good for diabetes, asthmatics and other respiratory problems.

b. Complementary to Sarvāṅgāsana helps in improving the posture and reducing the dorsal kyphosis. This happens when maintained for 1/3 the duration of sarvāṅgāsana with complete effortlessness, ease relaxation.

c. Attention is focused (dhāraṇā) on mid dorsal section of the spine, where the strong stimulation due to stretch and pain is felt. While maintaining give auto-suggestions of defocusing from the point of pain (Ananata Samāpatti) as suggested by Patañjali. Releases the prāṇa blocks and clears the airway narrowing.

Limitations

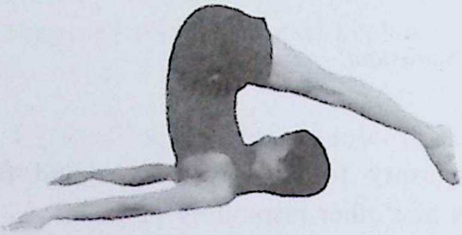
Those who have recently undergone any abdominal or thoracic surgery and cervical spondylosis should avoid this posture for 3 months.

12. Halāsana

Sthiti: Supine Posture

PRACTICE

- Inhale, raise the legs together slowly and gracefully (without bending the knees) till it forms about 45⁰ to the ground.
- Continue to inhale and raise the legs further to 90⁰ position and simultaneously bring the arms down placing them next to the buttocks.



- Exhale, raise the buttocks and the trunk without lifting the head. Support the back by the palms. Rest the elbows on the ground firmly to get better support to the back.
- Maintaining the legs parallel to the ground, straighten the trunk by pushing it up with the hands till the chin is well set in the suprasternal hollow. Inhale in this position.
- Exhale, bring down the toes further to touch the ground. Release both hands and rest the arms straight on the ground parallel to each other with palms facing the ground.
- Maintain this position for one minute with normal breathing.
- Inhale, come back slowly step by step to rest the trunk on the floor.
- Now exhale and bring down the legs to the ground.
- Relax in Śavāsana.

Note

- *Make sure that you have achieved perfect balance before you release the hands supporting the trunk.*

Benefits

Stretches and stimulates the back muscles, spinal joints and lumbar nerves. Enhances blood flow to the neck, activating the thyroid and keeps spine flexible.

Limitations

People with any problem with the spine, hypertensives and those with the cardiac problems must avoid this āsana.

13. Deep Relaxation Technique (DRT)

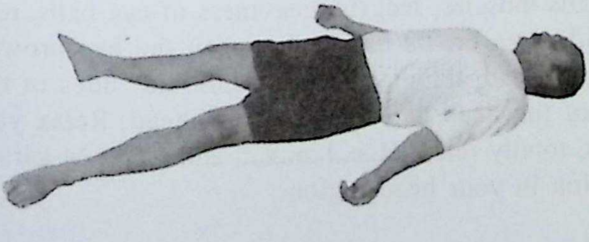
Sthiti: Śavāsana

PRACTICE

- Gently move your whole body, make yourself comfortable and relax completely.

Phase-I

- Bring your awareness to the tip of the toes, gently move your toes and relax. Sensitize the soles of your feet; loosen the ankle joints; relax the calf muscles; gently pull up the knee caps release and relax; relax your thigh muscles, buttock muscles; loosen the hip joints, relax the pelvic region and the waist region. Totally relax your lower part of the body. R..e..l..a..x.... Chant A-kāra and feel the vibration in your lower parts of the body.



Phase-II

- Gently bring your awareness to the abdominal region and observe the abdominal movement for a while, relax your abdominal muscles and relax the chest muscles. Gently bring your awareness to your lower back, relax your lower back, loosen all the vertebral joints one by one. Relax the muscles and nerves around the back bones. Relax your middle back, shoulder blades and upper back muscles, totally relax. Shift your awareness to the tip of the fingers, gently move them a little and sensitize. Relax your fingers one by one. Relax your palms, loosen the wrist joints, relax the forearms, loosen the elbow joints, relax the hind arms-triceps, biceps and relax your shoulders. Shift your awareness to your neck, slowly turn your head to the right and left, again bring back to the center. Relax the muscles and nerves of the neck. Relax your middle part of the body, totally relax. **R..e..l..a..x....** Chant U-kāra and feel the vibration in the middle part of your body.

Phase-III

- Gently bring your awareness to your head region. Relax your chin, lower jaw and upper jaw, lower and upper gums, lower and upper teeth and relax your tongue. Relax your palates-hard and soft, relax your throat and vocal chords. Gently shift your awareness to your lips, relax your lower and upper lips. Shift your awareness to your nose, observe your nostrils, and feel the warm air touching the walls of the nostrils as you exhale and feel the cool air touching the walls of the nostrils as you inhale. Observe for a few seconds and relax your nostrils. Relax your cheek muscles, feel the heaviness of the cheeks and have a beautiful smile on your cheeks. Relax your eye balls muscles, feel the heaviness of eye balls, relax your eye lids, eye brows and in between the eye brows. Relax your forehead, temple muscles, ears, the sides of the head, back of the head and crown of the head. Relax your head region, totally relax. **R..e..l..a..x....** and chant M-kāra feel the vibration in your head region.

Phase-IV

- Observe your whole body from toes to head and relax, chant an AUM in a single breath. Feel the resonance throughout the body.

Phase-V

- Slowly come out of the body consciousness and visualize your body lying on the ground completely collapsed.

Phase-VI

- Imagine the vast beautiful blue sky. The limitless blue sky. Expand your awareness as vast as the blue sky. Merge yourself into the blue sky. You are becoming the blue sky. You are the blue sky. Enjoy the infinite bliss. **E..N..J..O..Y..** the blissful state of silence and all pervasive awareness.

Phase-VII

- Slowly come back to body consciousness. Inhale deeply. Chant an "AUM-kāra". Feel the resonance throughout the body. The soothing and massaging effect from toes to head.

Phase-VIII

- Gently move your whole body a little. Feel the lightness, alertness and movement of energy throughout the body. Slowly bring your legs together and the hands by the side of the body. Turn over to the left or the right side and come up when you are ready.

Reminiscences of a Partcipant

I am an youngman who was suffering from Allergic Bronchial Asthma for over 13 years. I had to take drugs regularly to keep it under control which was only temporary. During summer season, the attacks kept me wheezing all night and I was 'ever in despair if my life was thus to be all through.

A chance reading of a newspaper article regarding Yoga Therapy Camp conducted by Vivekananda Kendra caught my attention and I attended a Yoga Therapy camp and was much benefitted. By regular practice of what I learnt in the camp, I was able to cure myself of this ailment and I rarely use bronchodilators now.

In the Camp we were explained in great detail all about this dread-disease which made it look less invincible. We were then taught Yogāsanas, Yogic Kriyās and Prāṇāyāma (breath control and regulation). Though these appeared difficult at first, became easier soon. We also learnt about the eight steps (Aṣṭāṅga Yoga) leading to self-realisation. Rāja Yoga, Jñāna Yoga and Bhakti Yoga were also explained. In fact, the camp was inaugurated by a devotee of ISKCON (International Society for Krishna Consciousness) with an empahsis on Bhakti Yoga.

Bhakti Yoga helps one to identify himself with his Maker and Karma Yoga to perform his duties .dispassionately, as an instrument in His hands. What doubt is there about the success of anything that is done with such celestial guidance? Our attempts to follow these Yoga ways rid us of our obsession about our own seemingly hard-to-solve problems and they all vanish like mist before the rising Sun. The path of Bhakti has done immense good to me.

There is no person who is born without problems. Some manage their affairs as well as they can in the circumstances they are placed and some do not, for want of ability or guidance. Ability they can discover within themselves and guidance is what is required. Vivekananda Kendra provides this guidance through its highly dedicated personnel. It is upto us to avail of their help. As one of those who has benefitted with their help I invite all readers also to do so. I am grateful to Dr.H.R.Nagarathna for giving me an opportunity to express myself.

B.S. Chandru
26 years

8

PRĀṆĀYĀMA

Sectional Breathing

This is a preparatory breathing practice for doing Prāṇāyāma. It chiefly corrects the breathing pattern and increases the vital capacity of the lungs. It has 3 sections:

(a) Abdominal Breathing or Diaphragmatic Breathing (Adhama)

Sit erect in Vajrāsana. Exhale. Inhale completely, slowly and continuously. This is called Pūraka. The abdomen is made to bulge continuously with the air entering especially into the lower sections of the lungs. Before exhaling stop the breath (Antarya Kumbhaka) for a second. While exhaling (Recaka) the abdomen is drawn inwards continuously and slowly. Before the breath is reversed, stop the breath (Bāhya Kumbhaka) for a second and inhale. Repeat the breathing cycle. There should be no jerks in the whole, process. It should be smooth, continuous and relaxing.

The diaphragm separating *the* thorax from the abdomen descends during inhalation with the bulging of the abdomen. This increases the air-flow into the .lower sections of the lungs. The rhythmic movement of the diaphragm massages the contents of the abdomen gently, and helps the organs to function normally. It promotes the general circulation also.

(b) Thoracic (chest) breathing or intercostal breathing (Madhyama)

In this sectional breathing performed while sitting erect in Vajrāsana, inhalation and exhalation are performed by expanding and contracting the chest only. Air flows through both nostrils slowly and continuously. The abdomen is controlled to avoid its bulging The middle lobes are opened up fully by this type of breathing.

(c) Upper lobar breathing or clavicular breathing (Ādya)

Sit erect in Vajrāsana. Raise the collar bones while inhaling. Keep the abdominal muscles contracted. The air is forced into the uppermost regions of the lungs thus ventilating the upper lobes.

The sparingly used upper lobes of the lungs will be properly aerated by this breathing.

These three sectionalised breathings are also called 'Adhama 'Madhyama' and 'Ādya'. In complete Yogic breathing technique the above three sections will be combined. During inhalation, the Adhama, Madhyama and Adya occur sequentially and during exhalation the same sequence namely abdominal, chest and clavicular breathinc occur. The whole process should be relaxing and comfortable, without any tension in the face.

Four Mudrās are generally associated with these sectional breathing. They are Cin Mudrā for Adhama, Cinmaya Mudra for Madhyarm, Ādi Mudrā. for Ādya and Brahma Mudrā for complete Yogic breathing.

PRĀṆA AND PRĀṆĀYĀMA

The basic vitality which is key to life, is what we term Prāṇa. *Prāṇa is the basic life principle.* We believe that everything in creation has Prāṇa. Growth of Prāṇa from a lower strata to higher strata is the process that characterises life. In man, this process is being accelerated by the conscious discrimination faculty and is called 'Prāṇāyama', regulation of Prāṇa. 'While the goal of life is to manifest the divirnty in us', the process of manifestation, a scientific method is Prāṇāyama'' or in general 'Yoga'.

The normal misconceptions about Prāṇa arise due to partial understanding. Some say that Prāṇa is the air entering in and going out of the lungs, others feel that it is the energy that which governs breath; some say that it is nothing but nerve impulses etc. But as we have seen, Prāṇa is the basic life principle. In its dormant form, it exists in the mineral world. In the vegetable kingdom, we can observe that the primary facets of Prāṇa. Start manifesting in the vegetable kingdom. As Prāṇa manifests more and more in the animal and human spectra, newer faculties emerge. The structure of the body is also suitably transformed giving scope for the fuller manifestations of the higher emerging faculties such as the mobile limbs and the senses in the animal world and the complex anatomy of the human body. In different parts of the body, different aspects of Prāṇa work with proper co-ordination and organisation between them. In the human system our seers have recognised five major facets of Prāṇa carrying on five major functions.

There are five different manifestations of Prāṇa also is called Mukhya Prāṇa (the chief Prāṇa) to distinguish it from its five manifestations. They are Prāṇa, Apāna, Samāna, Vyāna and Udāna. They are described in Praśna Upaniśat as follows:

पायूपस्थे अपानं चक्षु: श्रोत्रे मुखनासिकाभ्यां प्राण:
स्वयं प्रातिष्ठते मध्ये तु समान:।

।। प्रश्न उ ३.५ ।।

'Pāyūpasthe apānam cakṣuḥ śrotre mukha nāsikābhyām
prāṇaḥ svayam prātiṣṭhate madhye tu samānah'.

'The Apāna controls the organs of excretion and procreation; in the eye and the ear as well as in the mouth and the nose dwells the Prāṇa himself; and in the middle is the Samāna'.

The manifestation of chief Prāṇa in the lower regions of the abdomen is termed as Apāna. Prāṇa acts in the upper regions-face, nose etc., which essentially corresponds to the force which activates breathing. That which keeps the balance between the upper and lower forces (Prāṇa and Apāna) is called Samāna. Vyāna is defined as:

हृदि ह्येष आत्मा । अत्रैतदेकशतं नाडीनां तासां शतम
शतमेकैकस्या द्वा सप्तति द्वा सप्तति:
प्रतिशाखानानाडी सहस्राणि भवन्त्यासु व्यानश्चरति ।।

।। प्रश्न उ ३.६ ।।

'Hṛdi, hyeṣa ātmā; Atraitadekāśatam nāḍīnām tāsām śata
śatamekaikasyā dvā saptati dvā saptatiḥ,
Pratiśākhānānāḍī sahasrāṇi bhavantyāsu Vyānaścarati.

In the heart dwells Ātman. There are (in the heart) a hundred branches in each one of the Nāḍīs, and each of these branch Nāḍis again has seventy two thousand Nāḍīs. In all these the Vyāna moves'. Vyāna is that aspect of chief Prāṇa that flows through each and every Nādi. It coordinates the functions of different aspects of Prāṇa.

अथैकयोर्ध्वं उदानः पुण्येन पुण्यं लोकं नयति ।
पापेन पापं उभाभ्यमेव मनुष्य लोकम् ।।
।। प्रश्न उ ३.५ ।।

Athaikayordhvam Udānaḥ puṇyena puṇyam lokam nayati
pāpena pāpam, Ubābhyāmeva manuṣya lokam'

And then, through one of them (Suṣumna), the Udāna carries (the soul) to the virtuous world by virtuous deeds, to the sinful world by the sinful acts, and by both to the world of men'. And Udāna is the one that flows upwards in a subtle passage called Suṣumna. Normally this is not known to ordinary people.

Prāṇāyāma is the science of regulating and gaining control over this Mukhya Prāṇa allowing its fuller manifestations to emerge. But in particular we use regulation of breath to gain control over Prāṇa. Hence, we need to understand the difference between normal breathing (which is normally flowing randomly through one or both the nostrils), Kriya (like Kāpālabhāti), Yogic full breathing and Prāṇāyāma.

Normally there are three components of breathing i.e., Inhalation, Exhalation and Stoppage of breath. They are termed Pūraka, Recaka and Kumbhaka respectively. In Kumbhaka the stoppage of breath can occur in 3 ways: after inhalation (Āntar Kumbhaka), after exhalation (Śūnya or Bāhya Kumbhaka) and an automatic suspension of breath (Kevala Kumbhaka). This last variety, Kevala Kumbhaka is the aim of all Prāṇāyāmas. In this stage there is no force inside urging us to breathe in or out. A natural suspension of breath is accomplished. This may be induced for a short time by a preceeding Kriya like Kapālabhāti. Due to hyper-oxygenation, we get a glimpse of what Kevala Kumbhaka is like. Recognition is half the solution, but it should not end there. We must learn to induce this stage of automatic cessation of breath without the preceeding Kriya. Thus, the real Kevala Kumbhaka is the goal of all breathing techniques we are getting acquainted with. There are various effects of this Kevala Kumbhaka namely, deep relaxation, lowered metabolic rate, sense of blissfulness, expansiveness and single thought, essentially the same effects as in Dhyāna.

(See our book Prāṇāyāma for more details).

Schools in Prāṇāyāma

In the first school of prāṇāyāma forceful kumbhaka is a mandatory part. The ratio of Pūraka, Āntarya Kumbhaka, Recaka and Bāhya Kumbhaka will be initially 4 : 4 : 4 : 2 (the numbers in the ratio could be taken as seconds). Gradually as one progresses, the Kumbhaka portion is increased 4:12:8 :8; 4:16:8:12; 4:32:8:16; etc. As the duration of Kumbhaka is increased more and more, some portion of the Kumbhaka will be Kevala Kumbhaka. Continued practice leads one to attain Kevala Kumbhaka for a longer duration.

While in the second school, emphasizing the slowness of recaka and puraka, no forceful stoppage of breath (Kumbhaka) is used. Instead, the time taken for each inhalation and exhalation is made to increase gradually. Associated with it will be the deep relaxation. As one progresses, one finds that an automatic cessation of breath results. At the change over regions from Recaka to Pūraka and Pūraka to Recaka, a slowness takes place resulting in Kevala Kumbhaka.

In the first school, there is the danger of premature energy evocation, Kundalini shooting up without proper overall purification of the system in those who start doing for long durations. It may result in a disaster; neurotics and lunatics may be the outcome. One should work with precaution. The major point, many such wrecks miss, is the use of Bandhas with Kumbhaka-the Jalandhara, Uddiyana and Mula Bandhas. If this precaution is taken and a disciplined life is followed, one could use this school with no danger.

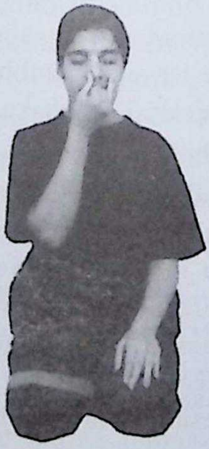
We have chosen the second, the safe path. Relaxation resulting from slowing down of breath is the key. Both schools have the same aim, but the second involves lesser violent changes. It is smooth. Hence you can notice, that in all the Prāṇāyāmas, we are not using Kumbhaka at all. But we would allow the automatic suspension of breath whenever it occurs. In fact, we should welcome it. Glimpses of Kevala Kumbhaka should be instilled in each and every Prāṇāyāma. That is the key. After prolonged practice of this method we proceed to introduce `Kumbhaka' in the Prāṇāyāma in the follow-up camps.

1. Sūrya Anuloma Viloma Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE

- Adopt Nāsika mudrā with your right hand.
- Close the left nostril with the little and ring fingers of Nāsika Mudrā.
- Inhale and exhale slowly through the right nostril (Sūrya Nādi) only.
- Keep the left nostril closed all the time during the practice.
- One cycle of inhalation and exhalation forms one round.
- Practice nine rounds.



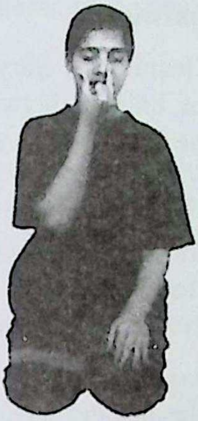
Note

- *Time taken for exhalation should be longer than inhalation.*
- *Depression patients may practice this Prāṇāyāma 27 rounds before breakfast, lunch, dinner and before sleep (4 times a day).*

2. Candra Anuloma Viloma Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE



- Adopt Nāsika Mudrā with your right hand.
- Close the right nostril with the tip of the thumb.
- Inhale and exhale slowly through the left nostril (Candra Nādi) only.
- Keep the right nostril closed all the time during the practice.
- One cycle of inhalation and exhalation forms one round.
- Practice nine rounds.

Note

- *Time taken for exhalation should be longer than inhalation.*
- *Anxiety patients may practice this Prāṇāyāma 27 rounds before breakfast, lunch, dinner and before sleep (4 times a day).*

Benefits

Physical

These Prāṇāyāmas help in clearing of the nasal passages. With regular and long practice, flow of breath through each of the nostrils becomes smooth and slow.

Therapeutic

It is Very useful for nasal allergy and Deviated Nasal Spectrum (DNS). Suryanuloma-Viloma helps in reducing the obesity effectively and Candranuloma-Viloma helps in increasing weight.

For specific significant improvement, the recommended schedule is to have twenty-seven rounds of this Prāṇāyāma four times a day (before breakfast, lunch, dinner and before going to bed). Systematic practice right or left nostril prāṇāyāmas have benefited large number of obese and under weight persons respectively to achieve normal weight.

Spiritual :

Cleaning of Surya and Candra Nāḍīs is the first step to bring the balance between the two Nāḍīs. They aid in unbfolding of the inner layers of consciousness.

Limitations

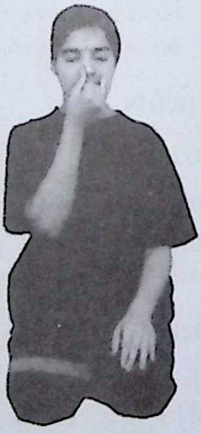
For *Sūryanuloma-Viloma Prāṇāyāma*, people suffering from hi-blood pressure, any heart disease and underweight problem should a avoid this practice.

For *Candranuloma-Viloma Prāṇāyāma*, people suffering from obesity and any type of allergic should avoid it.

3. Nādīsuddhi Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE



- Sit in any meditative posture.
- Adopt Nāsika Mudrā.
- Close the right nostril with the right thumb and exhale completely through the (left) nostril. Then inhale deeply through the same left nostril.
- Close the left nostril with your ring and little finger of the Nāsikā Mudrā, release the right nostril. Now exhale slowly and completely through the right nostril.
- Inhale deeply through the same (right) nostril. Then close the right nostril and exhale

through the left nostril. This is one round of Nādiśuddhi prāṇāyāma.

- Repeat nine rounds.

Note

- *This practice helps to maintain balance between Nāḍis.*
- *If you feel headache, heaviness of the head, giddiness, uneasiness etc.*

Benefits

Physical

It promotes balance between the two nostrils apart from cleansing the nasal tract. It increases the vitality. Metabolic rate decreases as in case of all other Prāṇāyāma prctices. It increases the digestive fire and appetite.

Therapeutic

It lowers the levels of stress and anxiety by harmonising the prāṇas. It is beneficial in respiratory disorders such as Bronchial asthma, Nasal allergy, Bronchitis etc.

Spiritual

It induces tranquility, clarity of thought and concentration. It clears pranic blockages and balances Ida and Pingala Nāḍis,causing Shuṣumna nādi to flow which leads to deep states of meditation and spiritual awakening. It helps to maintain Brahmacharya which is a pre-requisite for spiritual progress.

Limitations

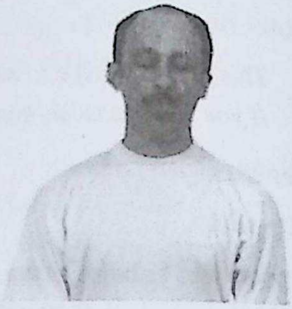
No Limitations.

4. Cooling Prāṇāyāma

a. Śītalī Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE

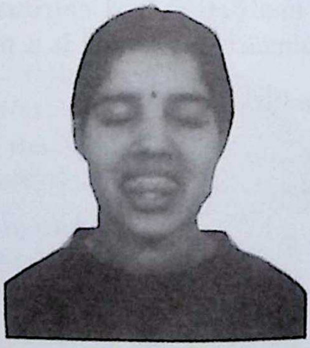


- Place the palms resting on the thighs.
- Stretchthe tongue forward partly out of the mouth and fold it so as to resemble the beak of a crow.
- Slowly suck in the air through the beak and feel the jet of cool air passing down the throat into the lungs.
- Slowly exhale through the nostrils, feeling the movement of warm air all the way up from the lungs through the throat and the nasal passages.
- This completes one round of Śītali Prāṇāyāma.
- Repeat nine rounds.

b. Sītkāri Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE



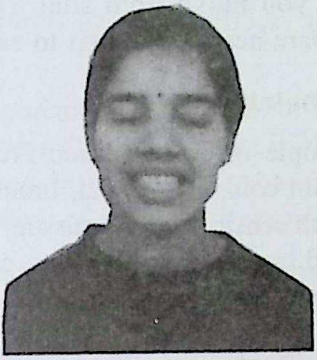
- Place the palms resting on the thighs.
- Fold the tip of the tongue inwards horizontally. The folded tongue slightly comes out between the two rows of teeth and provides a narrow opening on both sides.
- Slowly suck the air in through the two sides of the tongue. Feel the cool stream of air diffusing throughout the mouth and throat into the lungs.

- Exhale slowly through both nostrils. Feel the warmth of the exhaled air.
- This completes one round of Sītkāri.
- Repeat nine rounds.

c. Sadanta Prāṇāyāma

Sthiti: Vajrāsana

PRACTICE



- Place the palms resting on the thighs.
- Let the upper set of teeth touch the lower set of teeth.
- Keep the tip of the tongue just behind the teeth.
- Inhale through the crevices of the teeth and feel the cool air moving slowly and continuously into the mouth and passing down the throat into the lungs.
- The warm air is exhaled out slowly through both the nostrils. Feel the warmth of exhaled air.
- This completes one round of Sadanta.
- Repeat nine rounds.

Benefits

Physical :

They induce muscular relaxation and an over-all cooling effect. They soothen the eyes, ears and purify the blood. They quench the thirst, appease hunger and generate a feeling of satisfaction. The taste buds and the mouth are sensitised.

Therapeutic :

Allergies due to cold can be effectively overcome by prolonged practice. They help in reducing tensions and stresses and induce mental tranquility. Sītkari and Sadanta keep the teeth and gums healthy. They help reduce blood pressure and acidity in stomach. They cure chronic dyspepsia (indigestion), various chronic skin diseases, and releases even very subtle tensions.

Spiritual

Expansion of awareness - a facet of spiritual growth - takes place as you move from sitali (linear awareness) to sitkari (surface aware-ness) and then to sadanta (3-D awareness).

Limitations

People with Low Blood Pressure should avoid. People suffering from cold, sore throat, bronchitis etc. should avoid. Practitioners with sensitive teeth, missing teeth or dentures should avoid sitkari and sadanta. Instead they can practise sitali. Generally, avoid in winter or in cool climates.

5. Bhrāmarī Prāṇāyāma

Preparatary Practice of M-kāra and N-kāra:

- In order to chant M-kāra, you can chant any word ending with 'M' such as 'Om', 'Mum', 'Swim', etc. but stretch the 'M' part only. This will result in 'M-kāra' chanting.
- Chant 'MM' a few times and observe that your lips are closed, rows of teeth are separated and the tongue is just behind the lower set of teeth.

(N-kāra)

- In order to chant N-kāra, you can chant any word ending with 'N' such as ' 'King', 'Ring', 'Sing' etc and streth the 'N' part only.This results in the 'N-kāra' chanting.
- Chant 'NN' a few times and note that your lips are separated during this chanting.
- While practicing Bhrāmarī, we need to use this sound of 'N-kāra' and not 'M-kāra' whereas while practicing nādānusandhāna we use the 'M-kāra'.

Note:

- *In the beginning, 5 to 10 rounds of Bhramari is sufficient. Slowly increase to 10 to 15 minutes.*
- *It can be practised at any time to relieve mental tension.*

Benefits

Physical :

Creates a soothing effect on the nervous system. Cultures the voice and increases the melody.

1. Centering the awareness is an important step in harmonious, rhythmic free flow of prāṇa that cures illnesses. Perfect health is indicated by the prāṇa flowing in the central channel sushumna recognizable as equal flow of air in both nostrils.
2. Bhramari prāṇāyāma helps in starting from focusing the mind on the point of voice production in threat, you need to feel the vibration differing from this central point (the seat of visudha charka) to the upper respiratory pathways including the phoenix nasal passage. Paranasal sinuses eustachian tubes. The perception of these vibrations spread in three dimensional spherical ways to reverberate the entire skull region. This gives the necessary soothing internal massage.
    a. To release the phlegm in upper aiways and also
    b. To reduce the basic inflammation and open up the blocks.
3. Bhramari prāṇayam is very useful to calm down the mind and thus stress reduction.

Fields of Application of Yoga at VYASA

1. Yoga for all General public and Masses (Rural)
2. Yoga for unraveling the Hidden potentials of human beings
3. Yoga in Education
4. Medical Applications
5. Yoga for Corporate Sector: SMET, HOLSYM
6. Yoga for the Handicapped: MR, Blind, Schiz
7. Yoga for the socially deprived: Orphans, Addicts Remand home inmates, Prisoners
8. Other Applications of Yoga: Sports, Music, Dance, Law, Quantum Physics and Technology

What is Prashanti Kutiram?

The abode of peace (Prashanti Kutiram) is the name of a spacious campus 20 miles from Bangalore. This is the Head Quarters of VYASA.

9

MEDITATION

a. Nādānusandhāna

(A-kāra, U-kāra, M-kāra, A-U-M)

1. *A - Kāra chanting*

Sthiti: Vajrāsana

PRACTICE

- Sit in any meditative posture and adopt cin-mudrā.
- Feel completely relaxed and close your eyes.
- Inhale slowly and completely.
- While exhaling chant 'AAA' in a low pitch.
- Feel the sound resonance in the abdomen and the lower parts of the body.
- Repeat nine times.

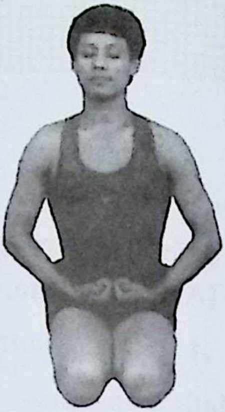
2. *U - Kāra chanting*

Sthiti: Vajrāsana

PRACTICE

- Sit in any meditative posture.
- Adopt Cinmaya Mudrā.
- Inhale slowly and completely.
- While exhaling chant 'UUU' in a low pitch.
- Feel the sound resonance in the chest and the middle part of the body.
- Repeat nine times.

3. *M - Kāra chanting*



Sthiti: Vajrāsana

PRACTICE

- Sit in any meditative posture.
- Adopt Ādi Mudrā.
- Inhale slowly and completely.
- while exhaling chant 'MMM' in a low pitch.
- Feel the sound resonance in the entire head region.
- Repeat nine times.

4. *A-U-M Chanting*

Sthiti: Vajrāsana

PRACTICE

- Sit in any meditative posture
- Adopt Brahma Mudrā.
- Inhale slowly and completely fill the lungs.
- While exhaling chant 'A-U-M ' in a low pitch.
- Feel the sound resonance throughout the body.
- Repeat nine times.

Note

- *Different sounds like A, U, M & AUM are produced loudly so that they generate a fine resonance all over the body. (Resonance will occur only when the frequency of the generated sound matches with the natural frequency of the body).*
- *These resonant sounds act as stimulations and the post-resonance silence deepens the awareness and releases even very subtle tensions.*
- *Therefore, while producing different sounds (A, U, M, & AUM) try to adjust the pitch in such a way that a fine resonance is achieved.*

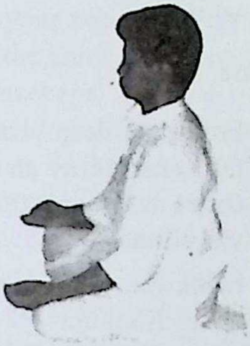
b. OM- Dhyāna (Meditation)

Sthiti: Any Meditative Posture

PRACTICE

- Sit in any comfortable meditative posture feeling completely relaxed.

Phase I



- Close your eyes and start chanting OM mentally. Allow the mind to repeat OM continuously without any break. If there are destractions, chant OM faster, not giving a chance for distractions.
- After a while the chanting slows down. Consciously slow it down further. If the mind jumps to distractions, increase the speed of japa of OM kara. Thus, by increasing and decreasing the speed of chanting, allow the japa to settle down to a slow pace with an unbroken stream of effortless flow of OM japa in your mind.

Phase II

- Make the chanting softer and softer, gentler and gentler, and more and more effortless. As you progress on the path of meditation, you will reach the second phase of japa in which you start feeling the vibrations of the japa in some part of the body and later throughout the body (three dimensional - 3D awareness).

Phase III

- As you slow down the japa of OM, observe the gap between two OMs. As you slowdown further, the gap goes on becoming wider and wider to diffuse into silence.

Phase IV

- The experience of inner silence helps to expand from the three dimensional awareness of the body to all pervasive awareness(beyond the limits of the body). The bed of silence becomes deeper and more expansive. Visualise and feel anocean of silence with gentle soft waves of OM on it. Now merge into complete silence and reach the stage of *Ajapa(no repetition).* This silence is the source of Creativity, Power, Knowledge and Bliss. Remain in this state for a while.

Phase V

- From this deep ocean of silence in the heart region, let one OM emerge as an audible sound which diffuses into the entire body and the space all around. Enjoy the beautiful vibrations.
- Blink the eyes slowly, gently open the eyes and come out of meditation.

Note

- *Try to touch this state of deep rest and inner silence several times in the day whenever you have some free time.*

c. Cyclic Meditation

Step I: **STARTING PRAYER**

- Lie on your back. Relax and collapse the whole body on the ground; legs apart; hands apart; palms facing the roof; smiling face; let go all parts of the body. As you repeat the prayer feel the resonance throughout the body.

लये संबोधयेत् चित्तं विक्षिप्तं शमयेत् पुनः ।
सकषायं विजानीयात् समप्राप्तं न चालयेत् ।।

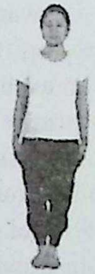
Laye Sambodhayet Cittam Vikṣiptam Śamayet Punah
Sakaṣāyam Vijānīyāt Samaprāptam Na Cālayet

Meaning: In the state of oblivion awaken the mind: when agitated pacify it; in between the mind. If the mind has reached the state of perfect equilibrium, then do not disturb it again.

Step II (a) : Instant Relaxation Technique (IRT)

- Bring your legs together; join the heels, toes together, and palms by the side of the thighs. Keep your face smiling till the end. Gently bring your awareness to the tip of the toes. Stretch the toes, tighten the ankle joints, and tighten the calf muscles. Pull up the kneecaps. Tighten the thigh muscles. Compress and squeeze the buttocks. Exhale and suck in the abdomen. Make the fists of the palms and tighten the arms. Inhale and expand the chest. Tighten the shoulders, neck muscles and compress the face. Tighten the whole body from the toes to the head. Tighten˙tighten˙tighten˙ Release and relax. Legs go apart; arms go apart, palms facing the roof. Assume the most comfortable position; let the whole body sink down. Let all the groups of muscles beautifully relax. Collapse the whole body. Enjoy the relaxation.

Step II (b) : Linear Awareness



- Now slowly raise the left hand above the head along the ground. Slowly turn over to the left side. Place the head on the left biceps; the right leg on the left leg; right palm on the right thigh. Let the whole body relax. Feel entire weight of the body coming down to the ground along the left side of the trunk. Fine linear awareness. Slowly start coming up to Tādāsana. Let all the movements slow down. Let the breathing be deep, slow, and continuous. Eyes are kept closed. Carefully feel the changes in your body as you standup and reach the vertical position. Feel the flow of blood down the heart. Feel the heartbeat and the pulse. Chant Bhrāmari to generate 3D awareness. NNN˙ Feel the whole body resonating. Feel the fine massaging effect.

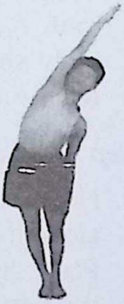
Step II (c) : Centring

- Now slowly lean forward. Feel the weight of the entire body on the toes. Pointed awareness. Slowly lean backwards. Feel the weight on the heels. Surface awareness. Come to the center. Lean to the right. The weight of the entire body is on the right edge of the right foot. Linear awareness. Lean to the left. Come to the center. Fine surface awareness. Now the whole body is centered, the weight of the body is equally distributed throughout the soles of the feet. Collapse the shoulders, arms hanging freely down. Smiling face. Feel all the changes taking place throughout the body.

Step III : Standing Āsanas

Ardha Khati Cākrasana

- Now we pass on to the first set of stimulation and relaxation.
- Ardha Kati Cakrāsana - the half wheel posture.
- Slowly start raising the right arm sideways up, to raise the arm slowly and continuously to horizontal position, enjoy the movement. As the right arm reaches 90° position twist the palms at the wrist. Concentrate on pointed awareness at the wrist and glide the right arm up to 135° position. Beautiful pointed awareness on the deltoid muscles of the right arm. As the right arm reaches up the vertical position feel the nice stimulation in the shoulder muscles. The right biceps touching the right ear, feel the beautiful surface awareness. Feel the blood gushing down the arm. Smiling face. Stretch the right arm from the tip of the fingers of the right palm. The entire right portion of the body gets stretched, but not the face. Keep the face always smiling and relaxed. Slowly start bending down to the left. Left palm sliding down along the left thigh. Fine movement of surface awareness. Enjoy the fine stretch of the waist muscles on the right side and compression on the left side. Observe all the changes taking place in your body. Slowly



start coming back to vertical position. Feel the blood flowing down and spread of nerve impulses throughout the body. Again stretch and pull up the right arm. Feel the entire right portion of the body stretched from the toes to the tip of the fingers. Slowly start bringing the right arm down to 135° gliding down smoothly. Feel the pointed awareness at the shoulder as you reach horizontal position and at the wrist as you slowly turn the palm downwards. Further, bring down the right arm to 45°. Feel the tingling sensation at the tips of the fingers. Continuously glide down the hand by the side of the thigh and hang it freely. Have a glance of the whole body again from toes to head. Entire right portion of the body is beautifully charged with nerve impulses and energized.

- Now let us perform AKC from the left side. Slowly start raising the left arm sideways upwards to 45° . Glide smoothly upwards to horizontal position, palm twisted upwards. Beautiful pointed awareness at the wrist. Left arm beautifully moving up to 135° . Then to vertical position. Left biceps touching the left ear. Now stretch up the left arm from the tip of the left fingers. Entire left portion of the body gets stretched up but not the face; face smiling and relaxed. Slowly start bending to the right. Right palm sliding down the right thigh. Movement of surface awareness, beautiful stretch of the left waist muscles. Enjoy the changes going on. Feel the heart beat and the nerve impulses spreading throughout the body. Slowly start coming up to the vertical position. Feel the nerve impulses from the tips of the fingers of the left palm. Pull up the left palm. Entire left portion of the body gets stretched up. Slowly bring the left arm down to 135°, then further down to horizontal position. Twist the wrist downwards and enjoy the pointed awareness. Glide your arm down further to 45° . Continuously drop down the hand by the side of the thigh and hang it freely. Collapse the shoulders. Have a glance of the whole body again from toes to head. Entire left portion of the body is charged with nerve impulses, energized and light. Enjoy the sense of well being. Both the sides of the body are now equally energized.

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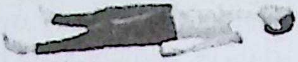
Step IV: Quick Relaxation Technique (QRT)



- Now slowly sit down and then lie down to Śavāsana from the right side. Let all the movements be slow and continuous. The entire right arm stretched, head on the right biceps, left leg on the right leg, left palm on the left thigh, the weight getting transferred to the ground from the right side, beautiful sharp linear awareness. Slowly turn over, the muscles of the back collapsing on the ground, bring down the right arm along the ground. Legs apart, arms apart, palms facing the roof. Assume the most comfortable position.

Phase I -Observing the abdominal movements.

- Bring your awareness to the movements of the abdominal muscles moving up and down as you breathe in and out. Recognize the haphazardness and jerky movement of the abdominal muscles. Do not manipulate the breathing, let it be natural, simply observe the abdominal movement. Count five rounds mentally, one inhalation and one exhalation forming one round.

Phase II -Associate with breathing.

- Synchronize the abdominal movements with the breathing. While inhaling the abdomen bulging up and while exhaling the abdomen sinking down. Inhale˙ deeply and exhale˙ completely. Continue up to five rounds.

Phase III - Breathing with feeling.

- As you inhale, the abdominal muscles are coming up.Feel the whole body getting energized and feel the lightness. As you exhale, feel the whole body collapsing and sinking down nicely. Release all the stresses and tensions completely. Inhale deeply and exhale completely. Continue up to five rounds.
- Bring your legs together and hands by the side of the body. Come up straight with the support of the elbows to the sitting legs stretched relaxation position (Sthiti) - Daṇḍāsana. Let all the movements be slow and continuous without jerks.

Legs apart. Take support of the palms behind the back. Relax the neck muscles, the head hanging freely down backwards or resting on either of the shoulders. Feel the changes throughout the body.

Step V : Sitting Āsanas

- Now we pass on to the next set of stimulation and relaxation. Vajrāsana, Śaśānkāsana and Ardha- uṣtrāsana/Uṣtrāsana combination.

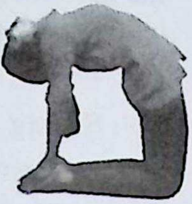
Vajrāsana

- Slowly fold the right leg backward and then the left leg, sitting on the heels, coming to the Vajrasana position. Palms on the thighs and keep the spine erect. Enjoy the effect of harmonizing, the beautiful balance. Recognize all the changes in the body.

Śaśānkāsana

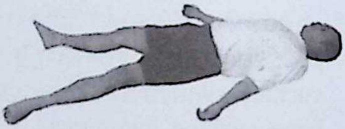
- Now slowly start taking the arms behind. Hold the right wrist with the left palm. Start feeling the pulse at the right wrist, feel the heart beat. Now slowly start bending down forward for Śaśānkasana. The abdominal and chest muscles pressing on the thigh, beautiful surface awareness. Now collapse the forehead on the ground. Fine surface awareness. Collapse the shoulders. Observe all the changes going on, the increased flow of blood into the head and feel the heaviness in the head region. Inhale and chant M-kara, MMM... Feel the resonance throughout the head, 3D awareness. Slowly come up to Vajrāsana. Carefully follow all the changes in the head region. Feel the lightness in the head. Feel the heart beat, fine 3d awareness throughout the body. Slowly release the arms, place them on the thighs near the knees.

Uṣṭrāsana



- Slowly rise up to stand on the knees for Ardha-uṣṭrāsana, . Standing on the knees, observe all the changes in the head region. Slowly slide the palms up along the thighs, fingers together and support the waist with the palms, fingers pointing forwards. Slowly start bending backwards from the waist. Relax the neck muscles; head hanging freely down. Beautiful stretching of the abdominal and thoracic muscles. This is Ardha-uṣṭrāsana. Those who can, go further down to Uṣṭrāsana by placing both the palms on the soles of the feet. Have a beautiful smile on the face. Inhale and chant AAA; Slowly return by releasing the arms and placing them on the waist. Feel the avalanche of nerve impulses throughout the body. Feel the heartbeat. Slowly come back to Vajrāsana and place the palms on the thighs. Feel all the changes and let the changes continue; fine 3-dimensional awareness throughout the body. Unfold the right leg and the left leg. Assume the leg stretched position. Head hanging freely backward or resting on either of the shoulders.

Step Vii : **Deep Relaxation Technique** (DRT)



- Slowly slide down to Śavāsana with the support of the elbows. Legs apart, hands apart, palms facing the roof. Let the whole body collapse on the ground. Let us make ourselves comfortable and relax completely. We will now go for DRT: continue as in page no. 55

10

KRIYĀS - CLEANSING TECHNIQUES

Introduction

Kriyās are cleansing practices. In that sense, we all practise Kriyās daily. Bathing, washing the face, brushing the teeth, all are Kriyās. But yoga Kriyās refer to special yoga techniques meant to cleanse the inner organs, developed by the yogis. Among several Kriyās available in the yogic lore six major Kriyās called Śat Kriyās are quite comprehensive.

They are

i. Trātaka for eyesight.
ii. Neti for upper nasal trackt (from throat to nostrils).
iii. Kapālabhāti for lower respiratory trackt (from nostrils to lungs).
iv. Dhouti for upper gastro intestinal tract (GIT) upto stomach.
v. Nauli for abdominal viscera (Agnisāra is the preparatory phase for Nauli).
vi. Basti for lower gastro intestinal tract (GIT) the colon and rectum. (Śankha prakṣālana is for the entire GIT).

Yoga Kriyās

- Cleanse the inner tracts.
- Remove Tardiness of organs.
- Develop an inner awareness.
- Desensitization.
- Stamina building.

Sneezing, running nose and blocking of nose are natural mechanisms to prevent and throw out any unwanted dangerous substances that may enter the nose. Nasal allergy or hay fever is a condition where in this protective response has turned into a disease because of the over reactivity of the air passages. In yoga therapy which is a self corrective technique, you are using your will power to reverse this hyper-reactivity. This is the process of voluntary desensitization by systematic repeated intermittent exposure to a non-specific provocative substance-the saline water, on the background of deep rest to the nerves and the immune system, in the nasal lining. On the first day when you try to practice Neti Kriya you will find it very disturbing with much discomfort. As the water or the rubber tube touches the inner lining of the nose, with a strong will power you go on to do the practice ignoring the up going sensations of irritation. Psychological acceptance of the irritating provocation followed by very deep rest is the trick to develop mastery over the reflex. As you go on repeating the kriya day after day, you will notice that it is becoming easier and easier. After a few attempts the water or the rubber tubing passes through the nostril without any irritation and you start enjoying the process. What has happened is that your voluntary nervous system (using your will power) has now learnt to control the involuntary reflex response to irritation. This is mastery. You have not lost the capacity to sneez but learnt to overcome the uncontrolled exaggerated reflex responses. It is important to do all these practices after you have learnt the technique of relaxation. Hence understand and learn the practice.

It you have severe nasal allergy learn how to relax during and after the practices of breathing techniques, asanas and meditation before you go on to try Kriyās. Do not practice neti kriya in the first week of starting the yoga lesson as you may not have learnt the technique of relaxation which is an essential component of neti kriya.

Can all asthmatics perform Neti ?

If you have had ear surgery or surgery for sinusitis, it is better to avoid Jalaneti but you can perform catheter neti (Danda Neti).

When surgery is done the passage from the nose to the sinuses may have been widened and water may enter the sinuses and get locked in there to cause problems. But the catheter cannot enter the sinus and hence may not cause any problem.

What is the role of Dugdha Neti and Ghrita Neti?

Dugdha neti is, neti performed by using half strength milk with salt, in the same way as Jalaneti. This may be more useful than Jala neti, in persons with specific allergies to inhaled proteins.

If you have prominent nasal polyps do not perform cathter neti; it may bleed when touched by the catheter. If you have any other associated major illness like heart disease, hypertension, take advice by a trained yoga therapist before you try neti.

For persons who have dryness of the nose due to chronic damage to the inner lining with bleeding (with or without loss of smell) ghrita neti performed with ghee immediately after jalaneti is a useful practice.

What is the role of Dhouti in asthma?

Vamanadhouti performed after drinking luke warm saline water in a very useful tool for its immediate effect of relieving acute attacks of asthma. It is a common experience in children that whenever they have an acute attack of asthma with wheezing and cough, they go on coughing to end up with vomiting that brings out all the phlegm and the wheezing stops. This is the nature's mechanism of activating the upward force of udāna by the upward surge of prāṇa during vomiting. This natural phenomenon is used during the voluntary training of vamana dhouti; to help you comeout of an attack without resorting to inhalers. Thus Vamanadhouti stimulates udana force that not only cleanses the stomach of the acid and mucus but also stimulates the cough reflex thus cleansing the air passages (small and big) of all the clogged up phlegm. When carried out repeatedly over a period of a few months it can help you develop mastery over not only the voluntary cough reflex but also the wheezing (bronchospasm) reflex .

The reflexes in this region such as sneezing, wheezing, coughing and vomiting are all controlled by ANS Vamana dhouti voluntarily activates the autonomic nervous system this reflex voluntary stimulation of these involuntary stimulation of these involuntary function where followed by voluntary deep relaxation helps in developing mastery over these reflexes similar to the principle of biofeedback. The concept in biofeedback is to develop mastery over an autonomic function by giving a voluntary sensory input of the functional status of the target organ. For eg., in biofeedback training to relax, you are attached to a small electrode from the ECG which is connected to the equipment that records and displays colored light to indicate the heart rate. By constantly looking at this light, you are asked to move the light from red zone to green zone for which you have to relax and calm down your mind. As soon as you get tensed the light shifts to red zone and when you relax it shifts to green light with this visual voluntary input soon you can learn to relax and be calm. This you have learnt to develop voluntary control over the involuntary function of increasing or decreasing the heart rate which is a function of ANS.

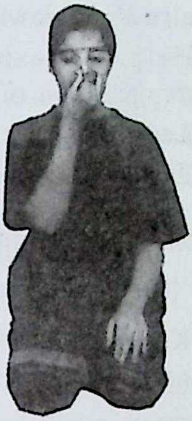
In yoga this type of training in mastery over all internal functions is aimed at not by using an external gadget but by deep internal awareness. The inner eye or the inner observation is sharpened by regular practice of awareness of the subtle visceral or organ sensations. This is done by exciting the target organ through a cautious controlled provocation of basic protective reflexes such as sneezing (Neti), vomiting (Dhouti) or blinking (Trataka). The ancient rishis also realized that the integral part of this mastery over these basic reflexes includes a conscious deep rest. Therefore mastery means ability to activate or stop the reflexes when required. Yogic loosening exercise and asanas performed with intense.

CLEANSING BREATHS

1. Anunāsika Breathing

(Cleansing by inhalation and exhalation)

Sthiti: Any Meditative Posture



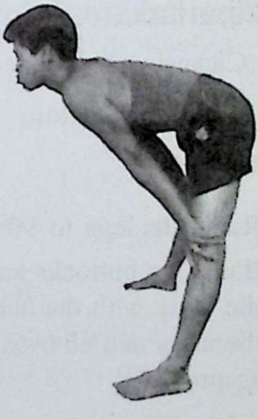
- Exhale completely. Inhale through both nostrils and hold the breath for a few seconds.
- Blast out the air through both nostrils in short bursts, until the lungs are completely empty. Repeat 5 times.
- Now close the right nostril using the thumb of the right hand. Inhale, hold for a few seconds and blast out through left nostril in short bursts of air. Repeat several times.
- Next, close the left nostril using the ring and the little fingers of right hand in nāsika mudrā. Repeat the above process several times through right nostril.
- Repeat the complete process several times using both nostrils. This type of breathing clears the respiratory passages and purifies the sinuses in the skull.

2. Mukha Dhouti

(Cleansing through a single blast breath).

Sthiti: Tāḍāsana

PRACTICE



- Spread the legs apart by about 2 feet.
- Lean forward and place the hands on the knees.
- Inhale deeply and expel the air forcibly as in a jet through the mouth, continuously. This is

effected by contracting the diaphragm as prolonged exhalation. Repeat several times.

Benefits

a Forceful exhalation expels the air trapped in alveoli during airway narrowing.

b. Helps in expelling carbon-dioxide and have better oxygenation of blood.

c. Leads to faster recovery after a dynamic muscle work.

d. Expels secretion trapped in airway.

3. Mukha Bhastrikā

(Cleansing through hyperventilation)

- Kneel down, with the heels together and sit erect.
- Inhale fully.
- While exhaling in a series of expulsions of the breath through the mouth, (keeping the lips puckered as if you are going to whistle) bend forward and rest the head on the ground in front of the knees. The expulsions are done with the help of the abdominal muscles.
- Inhale, come up slowly.
- Repeat several times.
- The purpose of Mukha Bhastrika is to reduce the level of carbon di-oxide present in the body. Also a cleansing practice.

4. Viparītakaraṇi Kriya

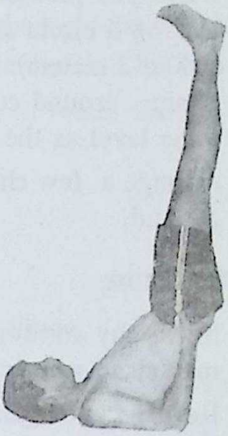
(Cleansing in inverted posture)

Sthiti: Supine Posture

PRACTICE

- Raise the legs to 90°, keeping the knees straight.
- Raise the buttocks and the trunk off the ground by supporting the body with the hands at the waist to transfer the weight to the arms and elbows. Keep the elbows as close to each other as possible.

- Slowly move into the final position of Viparītakaraṇi by raising both legs to vertical position and maintaining the trunk at an angle of 45⁰ to the ground.
- In the final position the weight of the body rests on the shoulders, neck and the elbows, the trunk is at 45⁰ angle to the floor, the legs are straight and perpendicular to the floor. Note that the chin should not press against the chest.



- Close the eyes and feel comfortable.
- Now practice Kapalabhati at a rate of about 40/minute.
- Now slowly in a rolling motion, pull the buttocks inwards.
- Then contract the anal sphincter muscles and pull the anus inwards and upwards.
- Hold it as long as possible with normal breathing.
- Release the bandha and then retrace the steps to come down to the supine sthiti and rest in Śavāsana for a while.

Benefits

It stimulates and tones the uro-genital and excretory systems. Intestinal peristalsis is also stimulated, relieving constipation.

MAJOR KRIYĀS

Among the six processes which purify the system mentioned earlier: Kapālabhati, Neti, Dhouti, Nauli, Trātaka and Basti we will briefly describe the first five only.

TRĀTAKA

A. Preparations

i) Get candles, candlestand and match box.

ii) Wash your eyes with cool and clean water (with eye cup if available) before starting the practice for good result.

iii) When you practice in a group, sit around the candle stand, making a circle at sufficient distance from the candle stand (1.5 to 2 meters). The maximum number of participants in a group around could be about ten. Keep the candle at the same level as the eyes.

iv) Arrange a few chairs for those who are not able to sit on the ground.

Instructions

- Sit in any comfortable meditative posture, if necessary you may sit in a chair.
- Remove your glasses and wristwatches.
- Keep your spine, neck and head in a line. Collapse your shoulders.
- Close the eyes and adopt Namaskāra mudra.
- Maintain a smile on your face through out the practice. Calm down your mind. Observe your body & breath.
- Begin the session by chanting the verse from the Upaniṣats praying for the welfare of the teacher and the student.

Starting Prayer

ॐ सहनाववतु सहनौ भुनक्तु
सहवीर्यं करवावहै।
तेजस्विनावधीतमस्तु मा विद्विषावहै
ॐ शान्तिः शान्तिः शान्तिः।।

Om sahanāvavatu, Sahanou bhunaktu,
Saha vīryam karavāvahai ,

Tejasvināvadhītamastu, mā vidviṣāvahai
Om Śāntiḥ, Śāntiḥ, Śāntiḥ.

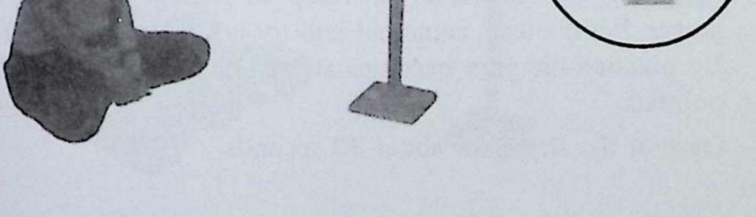
May he protect us both (i.e., the teacher and the student). May he nourish us both. May we both work together with great energy. May our study be enlightening and fruitful. May we not hate each other. Om Peace, Peace, Peace.

- Gently take your hands behind the back, catch the right wrist with left palm, make a loose fist with the right hand and feel the pulse of right hand using your fingers of left hand.
- As you exhale, gently bend forwards to touch the ground and surrender to the All Mighty.
- Come back as you inhale.

Jyoti Trātaka (in three stages)

Step I: **Effortless Gazing or Focusing at flame**

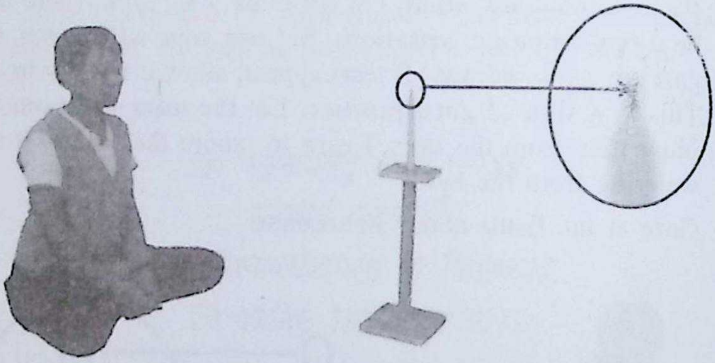
- Let us start Stage-I of Jyoti Trātaka i.e., "Effortless gazing or Focusing".
- Gently open your eyes with a few blinks and look at the floor. Do not look at the flame directly.
- Slowly shift your vision to the base of the candle stand, then move to top of the stand, then to the candle and then slowly look at flame of the candle. Now, start gazing at the whole flame without any effort. Do not blink your eyes. There may be a few irritating sensations, but use your will power and gaze in a relaxed way. If tears appear, allow it to flow freely. This is a sign of good practice. Let the tears wash out the impurities from the eyes. Learn to ignore the irritation and watering from the eyes.
- Gaze at the flame about 30 seconds.



- Slowly close your eyes, rub your palms against each other for a few seconds, form a cup of your palms and cover your eyeballs.
- Give *press and release palming.*
- After completing five rounds, gently drop your hands down.
- Feel the cool sensation around the eyeballs. Relax for a few seconds. Do not open your eyes immediately.

Step II: **Intensive focussing at the tip of the wick of the flame**

- Pass on to Stage-II of Jyoti Trātaka i.e., "Intensive focussing" (Dhāraṇā) .
- Gently open your eyes with a few blinks and look at the floor. Do not look at the flame directly.
- Slowly shift your vision to the base of the candle stand, then move to top of the stand, then to the candle and then slowly look at the flame of the candle. Now, start gazing at the whole flame without any effort.



- Slowly gaze at the tip of the wick of candle, the small black cord. Focus your attention at one point. This is a practice of focussing and concentration. Keep on gazing, use your will power. Let the tears come out and try not to blink your eyes. By practice the gaze becomes steady, making the mind one pointed.
- Gaze at the flame for about 30 seconds.

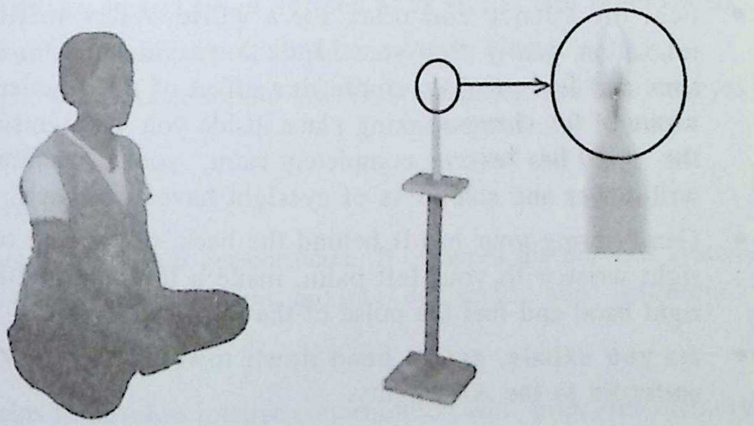
- Slowly close your eyes, rub your palms against each other for a few seconds then form a cup of your palms and cover your eyeballs.
- Give constant pressure palming. Press constantly around the eyeballs with your palms and inhale deeply and exhale completely continue four more rounds count mentally. Do not touch the eyeballs with your palms directly. Relax your eye muscles completely.
- After completing five rounds, gently drop your hands down.
- Feel the cool sensation around the eyeballs. Relax for a few seconds. Do not open your eyes immediately.

Note for Stage-I & II

- *Continuously gaze at the flame, no blinking or winking, smooth and effortless gazing.*
- *Use your will power and ignore watering or irritation in the eyes. Gradually increase the duration of gazing upto 60 seconds over a few weeks of practice.*

Step III: De-focussing

- Let us proceed to Stage-III of Jyoti Trātaka i.e., "De focussing".
- Gently open your eyes with a few blinks and look at the floor. Do not look at the flame directly.



- Slowly shift your vision to the base of the candle stand then move to the top of the stand, then to the candle and then slowly look at the flame of the candle. First fix your attention at the flame, then gradually widen your vision. Slowly de-focus your attention from the flame and have a de-focused gaze on the flame. With expansive awareness, collect all the details of the flame such as colour of the flame, shape of the flame, and aura around the flame. Then observe the aura expanding more and more and see the small light particles around the flame. Recognize the subtle change of acheived by de-focussing.
- After one minute of de-focussing, gaze or focus on the flame. Slowly close your eyes and retain the image in your mind. Visualize the flame between your eyebrows and collect all the details with your eyes closed. When the image disappears go for palming.
- This time we combine palming with breathing and Bhramari. First apply constant pressure around your eyes, then inhale and chant Bhramari Mm....; feel the vibrations of Bhramari through out the body; repeat the same. Inhale - chant Mm.... as you exhale, inhale Mm...., inhale Mm.... and the last round inhale Mm....; feel the sound resonance in the entire head region specially round the eye region.

Step IV: **Silence**

- Feel the silence and relax for a while. After sufficient relaxation, gently drop your hands down. Sit quiet for some time and feel the deep comforting effect of the practice. Be aware of the changes taking place inside you. Recognise that the mind has become completely calm, your concentration, will-power and sharpness of eyesight have improved.
- Gently bring your hands behind the back, catch hold of the right wrist with your left palm, make a loose fist with the right hand and feel the pulse of the right hand.
- As you exhale, gently bend down towards the floor and surrender to the All Mighty.

- Come back as you inhale.
- Gently give a feather massage around the eye muscles with three fingers (index, middle and ring fingers).

Tips for Practitioners

- This is to be practiced in the dark preferably in the evening.
- Remove glasses, wristwatches, and belts and make yourself comfortable in the posture.
- Sit with your head, neck and spine upright. Always open the eyes with a few blinks.
- During eye exercises you must not move your head and must carry on eyeball movement only.
- During Jyoti Trataka, when you open the eyes, don't look at the flame right away. Start looking at the floor and then slowly bring your gaze onto the flame.
- During palming don't let the palms touch or press the eyeballs. (Palms & not the fingers cover the eyes).
- During palming do very slow & deep breathing with awareness.
- Palms are placed in such a way that there is complete darkness to the eyes.
- The facial muscles, eyebrows and eyelids should remain totally relaxed with a beautiful smile on the face.
- Trātaka should be performed after āsanas and prāṇāyāmas.
- Trātaka must be practiced on a steady flame.
- The practitioner should always avoid undue strain to the eyes.

Benefits

Therapeutic

Errors of refraction get corrected. It balances the nervous system, relieving nervous tension, anxiety, depression and insomnia.

Spiritual

It helps to develop intense concentration and improves memory.

It helps to develop a strong will-power. It is an excellent preparation for meditation.

Limitations

Epileptics should avoid gazing of flickering candle flames . They can, however, choose a totally steady object to gaze on. If you are a sensitive person it may aggravate your insomnia as it makes you very alert. Hence do not practice Trātaka before going to bed.

NETI

a. Jala Neti (Cleaning the nasal passage)

Sthiti: Tāḍāsana

PRACTICE

- Add about half a teaspoon of salt to a neti pot full of sterile lukewarm water.
- Stand with the legs apart.
- Hold the neti pot in your right hand.
- Insert the nozzle of the Neti pot into the right nostril.
- Keep the mouth open and breathe freely through the mouth.
- Tilt the head first slightly backwards, then forwards and sidewards to the left so that the water from the pot enters the right nostril and comes out through the left by gravity. Allow the flow till the pot is empty.
- Repeat the same on the left side.
- To clear the nasal passages of the remaining water, blow out the water by active exhalation through alternate nostrils as in Kapālabhāti.

Benefits

It helps to clear nasal passages. Cleans cold, hypersensitivity, headache, sinusitis and bronchitis.

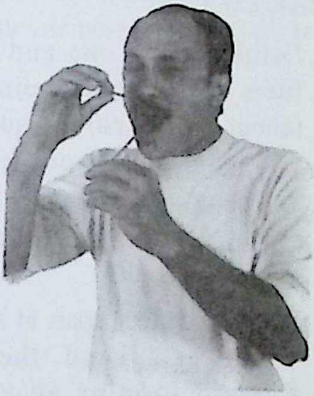
Limitations

Neti should be avoided if you have had a recent ear infection or nasal septum operation. Also avoid neti for a few days after a bleeding nose.

a. Sūtra Neti or Rubber Catheter Neti

Sthiti: Tāḍāsana

PRACTICE



- Insert the blunt end of a thin soft rubber catheter horizontally into the right nostril.
- Gently push it along the floor of the nose until the tip is felt in the back of the throat.
- Insert the right index and the middle finger through the mouth and catch the tip of the catheter at the back of the throat.
- Pull it out through the mouth and gently massage the nasal passage by catching the two ends of the tube.
- Remove the catheter through the nose.
- Repeat on the left side.

Note

- *Take care not to push the catheter vertically into the nostril.*
- *Before you start this practice, cut and trim the nails of the fingers to be used for inserting in the mouth, as it may injure the throat when you are trying to grasp the tip of catheter in the throat.*

Benefits

Clears the nose and pharynx. Will power increased. Desensitizes to dust, pollution etc. in nasal allergy patients.

Limitations

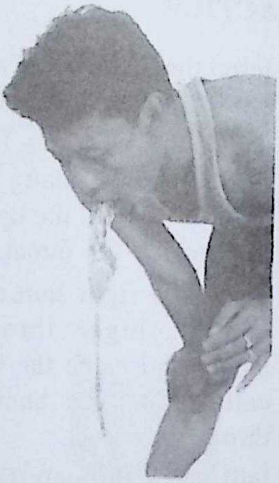
Same as jalaneti, other severe plus, back pain, hypertension, cardiac problems. Avoid during later part of pregnancy.

DHAUTI

a. Vamana Dhauti

Sthiti: Tāḍāsana

PRACTICE



- Drink about one and a half liters of lukewarm saline water (about 1% saline) as quickly as you can until you feel like vomiting it out.
- Churn the stomach by twisting exercises.
- Stand with feet apart at shoulder width and bend the trunk forward forming an angle of about 80 degrees to the ground.
- Now with the help of the middle three fingers of the right hand, tickle the back of the throat to vomit out (vaman) all the water.
- Repeat the process of tickling the throat until no more water comes out which may mean that all water has been vomited.
- With continued practice one can stimulate the vomiting sensation and vomit out the water without using the fingers at the throat.
- Relax completely in DRT for about 15 to 20 minutes.
- Have a bland breakfast after about half an hour.

Note

- *This is to be done early in the morning on an empty stomach.*
- *A bland breakfast could preferably consist of Indian kichadi . (rice and lentil-dhal, cooked with or without salt), along with a tea spoon ful of pure ghee. A void coffee or tea for breakfast.*
- *With long practice one can learn to vomit all the water as if it is a continuous jet. This is called Gajakaraṇi.*

Benefits

Vaman dhoti or kunjal kriya removes hyper acidity, good for flatulence and dyspepsia (indigestion), cleanses the stomach of all its contents, promotes proper functioning of the stomach and prevents hyper acidity. Dhouti Kriya is extremely useful for gas trouble, high acidity in stomach and for curing Asthma also. Useful for asthma and bronchitis to clear the air passages through reflex stimultaion fo udāna Prāṇa.

Limitations

Avoid-in case of severe abdominal pain, abdominal surgery, tonsillitis, hypertension, ischaemic heart diseases and during menstruation.

b. Vastra Dhauti

Preparation

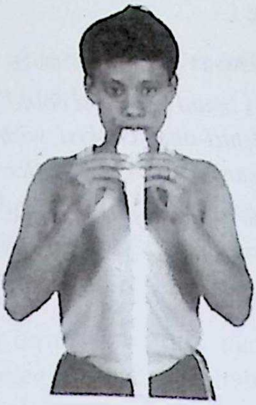
1. Use white thin & soft cotton cloth without any stiches of 5-6 cms. width and about 7 to 10 meters long.
2. Place it in a bouel of water on the table in front of you and stand comfotably in tādāsana.

Sthiti: Tāḍāsana

PRACTICE

- Catch on end of the cloth with both hands and start swallowing slowly with deep awareness and ease. Drink sips of water along with the cloth if it does not move on smoothly.
- Make sure that about 20 - 25cms of the cloth is left out towards the end.

- After completing wait for a few seconds, churn the abdomen by movement or agnisara twisting.
- Lean forward and start pulling out the cloth slowly with ease and relaxation.
- If the cloth is not coming out easily, wait, take a deep breath and relax, drink a few sips of water and then continue.



NOTE

- *Do the practice under supervision of a guide.*
- *Never pull heavily on the cloth as the food tube(oesophagus) may go into a spasm and make the procedure very strenuous.*

11

MEDITATION AND THE SCIENCE OF EMOTION CULTURE

MEDITATION AND SILENCE

Modern research has now thrown light on the Yogic processes especially meditation. Experiments on T.M. (Transcendental Meditation) have shown that meditation can induce greater rest as can be seen in the following chart.

It is shown that meditation for 20 minutes can give much more rest than 6 hours of sound sleep.

Meditation is a Yogic process of providing deep rest to the system by allowing the mind to calm down to its basal states. Features of meditation are

1. Mind dwells on a single thought of choice
2. Deep relaxation of all parts of the body
3. Reduced metabolic rate by slowing of breath
4. Freshness, lightness and a feeling of expansion at mental level.
5. Calmness, peace" and serene bliss.
6. Continuous awareness.

The benefits are many. Improved concentration, memory, emotional equipoise and higher creativity, are observed.

A. Simple Process of meditation

1. Ask the meditators to sit in Padmasana or any comportable posture with spine erect.
2. Let them close the eyes and relax the whole body.
3. Let them perform 5 rounds of Bhramari.
4. Let them sit silent now and repeat Bhramari in the mind and feel the vibrations.

5. Let them learn to enjoy the state and ask them to enjoy the silence.

Tips to Teachers

1. Make them interested in meditation by telling the benefits of meditation.
2. Ask them to feel vibrations in Bhrgmari all over the body. Use palms on face, throat, thorax, abdomen thighs and soles to allow the vibrations to spread.
3. Teach them to feel the breath - cool air entering through the nostrils and warm air coming out.
4. Mental 'm' repeated - you can give them counts of the sound, if necessary.
5. Ask them to narrate their experiences.
6. Use post meditation phase to harness the memory and creativity developed in them.
7. Develop a fine atmosphere of silence and serenity during meditation.

Some Teaching Tips

1. Opening up the blocked nostrils:

   Often it is experienced that one of the nostrils is blocked. This may be due to cold or deviated septum or Pranic imbalances. Following techniques often help them.

a. For opening the right nostril
   - i. Lie down on the left side.
   - ii. Support the left arm pit with a stick.
   - iii. Cross the right, thigh on the left while sitting on a chair or lying down supine, and vice versa for the left.

b. Often jogging releases the nasal blocks.

c. Use neti or kapalabhati, if necessary.

2. Use least pressure on the nostrils. Ultimate aim is to use no fingers but to move the breath at will.

3. Let abdominal breathing be predominantly adopted.
4. Steps of introduction are same as Yogasanas.
5. Can be oractised anytime of the day.

THE SCIENCE OF EMOTION CULTURE

1. Harnessing the "Right Brain"

Brain researchers have found that the right lobe of the brain is the seat of emotions, creativity, etc. which we have been calling as the "heart". The "head" representing the intellect has its abode in the left lobe of the brain. Modern science has helped to develop the left brain but the right is grossly neglected. This lopsided growth is at the base of most of the modern aliments and increasing unrest and decreasing quality of life. Thus, harnessing the right brain has become very necessary.

Bhakti yoga or the Yoga of devotion aims to fill this need. This science of emotion culture develops the right brain, purifies the emotions and elevates man to experience ecstatic bliss of Divinity.

Bhakti Lahari audio cassettes of sVYASA consist of Prayers, Slokas, Namavalis, Bhajans, Chants, etc. These devotional songs harness the emotional personality through the science of emotion culture by invoking, amplifying and diffusing the emotions. Through release of emotional suppressions you can acheive better health, harmonious growth of head and heart, and great bliss.

2. Physiology of Emotions

In thinking, changes are confined predominently to the skull region. When any thought persists, it intensifies, triggering the centres of emotions in the right brain and limbic cortex. This discharges nerve impulses that activate the sympathetic nervous system and also releases hormones that are transmitted through the blood stream. This in turn sets off a series of chain reactions resulting in wide spread physiological changes.

The emotions are thus felt all over the body such as tears in the eyes, choking in the throat, rushing of blood to the face, goose-flesh, etc. At their termination the nervous system slowly returns to normal. The changes due to emotions or feelings are more intense and lasting compared to mere thinking.

3. Kāma, Prema and Bhakti

Love is one of the most powerful emotions manifest in all beings. At its grossest level it projects itself as lust. This Kāma is insatiable and energy-sapping. Its effect is like a tempest after sunset. Selfishness reigns supreme in this. But Prema (pure love) is elevating. Its gentle spring always remains fresh. Featured by Tyāga (sacrifice), the lover finds his happiness in that of his beloved. "Tat Sukha Sukhitvam" is the formula, says Nārada. Much greater is the bliss of Prema compared to the joy of Kāma.

Bhakti is Prema (love) with total surrender. With the "Śaranāgati" of himself and his ego at the feet of the Lord, man merges himself into his Lord culminating in sākśatkāra. In this state, the Bhakta experiences an ecstatic bliss.

4. Sing with Bhāva

Songs in devotional sessions are aimed to tune the heart-strings towards a self-elevating Bhakti bhava.

Come, join the group, sing aloud. This is the way to purify your emotions and grow towards perfection or Divinity.

In training the right brain, it is the Bhāva (attitude) that matters more than mere words. That is why hymns, whatever be the language, have universal appeal. There is a heavenly rhythm, a harmony and a melody in every sound and sigh. If these are fine-tuned with Prema and Bhakti, one reaches the heights of happiness-the zenith of ecstasy.

Sing loudly with the group; sway with the sound. Let your heart melt, let tears roll down your cheeks freely; let go all your feelings without inhibitions. You feel light in the head. Your emotional suppressions diminish, diffuse and vanish like clouds before sunshine. You come out of the session with a lightness of heart and the gloom of unknown sorrow changes into a bright gleam of joy. The world appears a better place. Serve others too with this elixir of happiness by emotion culture.

CORRECTING THE WRONG NOTIONS

a. Lectures

The IAYT, as mentioned earlier, works at all levels i.e. Annamaya kośa, Prāṇamaya kośa, Manomaya kośa, Vijnānamaya kośa and Ānandamaya kośa levels. We saw in the previous section as to how mind and emotions are dealt with to vanquish the Ādhi.

At Vijnānamaya Kośa level, the wisdom predominates and analysis to understand the subtleties of the laws of human existence is used. Series of 12 lectures on Integrated Approach of Yoga Therapy unravel the concept of health according to WHO definition and its relation to yoga; concept of body and disease according to modern medical world and yoga & spiritual lore; the root cause in the Manomaya kośa as Ādhi which leads to all moderen diseases called Vyādhi; various yoga methods work at all the 5 levels i.e., Annamaya kośa, Prāṇamaya kośa, Manomaya kośa, Vijnānamaya kośa and Ānandamaya kośa levels; unseen imbalances at the mind level, emotions and prāṇa level can be set right to prevent diseases, promote normal and positive health and remove the symptoms of the diseases; at Vijnānamaya kośa level the lectures will correct our notions about stress, misery and happiness as postulated and described in Yoga and Spiritual lore; the lectures related to Ānandamaya Kośa are meant to delineate the methods used to bring Ānanda (bliss) into our day to day lives by the process of Karma Yoga.

Thus, the series of lectures open up new vision among the participants towards a life of fulfilment and bliss.

The details can be found in the following books brought out by Swami Vivekananda Yoga Prakashana (Publications wing of sVYASA)

1. Yoga and Health.
2. Yoga, its basis and applications.
3. The science of emotion culture.
4. The secret of action.
5. The science and art of prāṇāyāma.

b. Yoga Counselling

Having given the overall vision about Yoga, Health and IAYT for promotion of positive health through the lectures and interactions through questions and answers, yoga counselling is used to concretise this wisdom presented through lectures to solve the probelems of the individuals.

Specially trained yoga counsellors diagnose the basic problems of participants at psychological level which may later percolate into the prāṇa & body level to cause diseases. One or more of the following 8 dimensions are found during the interaction and discussion on a one to one basis;

a) Hereditary Tendencies
b) Congenital problems & their repurcussions on the psychology
c) Over sensitivity
d) Excessive rush & speed of mind
e) Perfectionist attitude in life
f) Calamities & trauma encountered by the persons
g) Psychological conflicts between
    i) One ethical norm and other
    ii) One duty & other duty
    iii) duty & ethics
h) Questioning the very basis of
    i) ethics & morality
    ii) duties
    iii) injunctions & disciplines in life
    iv) the purpose of this life.

Having identified one or more of these problems, the councellor will suggest solutions to the problems and will substantiate & convince the usefulness of those solutions through anecdotes, illustrations, scientific data (if necessary) etc.

The participant will understand & decide to try out the suggested methods to change themselves by those specific yoga methods. The persons are asked to keep a diary to check for themselves about their progress or otherwise, they are followed up on a day to day basis so that they will be able to learn as to how they can apply the principles effectively.

BRINGING BLISS INTO DAILY ACTIVITIES

Karmayoga techniques are used to bring the bliss and happiness of Ānandamaya Kośa into all activities of their daily life

The general nature of us is that either

a) we want to escape work or

b) we get lost in work, often getting obsessed with work and turn workaholics leading to large tensions and stresses

c) we maintain moderation in our work habits, think of helping others or involve in national constructive works or humanitarian services etc.

Initially we alternate phases of relaxtion, slowing, calming and silencing with work. Gradually we start learning the art of working in relaxation. As we learn the science of deeper relaxation through dynamic relaxation process as cyclic meditation, we learn the art of working in blissful awareness. The inner cleansing starts and the deep seated stresses, blocks, knots, obsessions, phobias, etc will all come out from the subconsciousness level paving way for manifestation of the divinity within us.

Hardly do we realise the importance of silence at the mental level, slowing of breath at Prāṇa level and relaxation of groups of muscels at the body level. and much less the experience of bliss.

when we start understanding the role of each of the above and start using them regularly the happiness in our life starts blossoming. This is what we call as promotion of positive health.

The positive health can now be called blissful health.

And that is the way of Anandamaya Kośa

Let us all, not only use IAYT to prevent ailments to maintain normal health but also promote our positive health through regular practices of yoga mentioned in the earlier chapters of this book.

Integrated Approach of Yoga Therapy

Kośa		Practices
1. Annamaya Kośa	:	Loosening, Asanas, Kriyas, Diet.
2. Prāṇamaya Kośa	:	Kriyas, Breathing, Prāṇāyāma.
3. Manomaya Kośa	:	Dhyāna, Bhakti, Devotional songs.
4. Vijnānmaya Kośa	:	Jnana, Lecture & yogic counselling.
5. Ānandamaya Kośa	:	Working in blissful awareness.

12

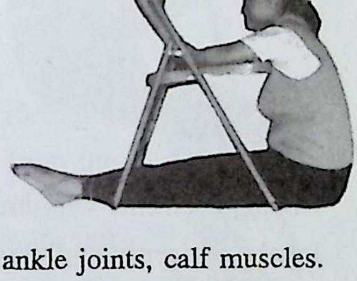
YOGA - CHAIR - BREATHING

Asthmatics find their periods of severe airway obstructions most difficult to manage and invariably have to mebulization, resort to injectable steroids and Bronchodilators. For such cases an eight step yoga procedure has been developed based on the knowledge base called *Yoga-chair-breathing*. We describe the procedure.

Bronchial asthmatics invariably know as to when they get episodes of airway obstructions. They are asked to resort to the Yoga-Chair-Breathing technique when the 'attack' starts. They are asked to pull a nearby chair and start the following procedure without resorting to drugs.

EIGHT STEP PROCEDURE

1. I.R.T (i.e.,Relaxation using a chair as support)



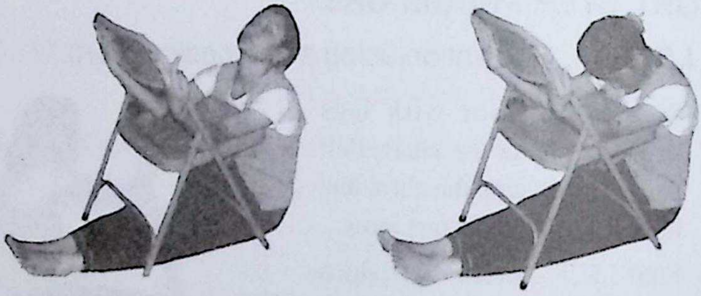
- Sit on the floor with legs stretched under the chair. Pull the chair towards the chest and hold onto it with your arms.
- Start I.R.T. Stretch and tighten the entire body from toes to the head.
- Start tightening from the toes, ankle joints, calf muscles.
- Pull up the kneecaps.
- Tighten the thigh muscles.
- Compress and squeeze the buttocks.
- Breathe out and suck the abdomen inside.
- Form the fists and tighten the arms.

- Inhale and expand the chest.
- Tighten and shoulders, neck muscles, compress the face,
- Tighten the whole body from the toes to the head
- Tighten........... tighten............tighten..............
- Release and relax. Collapse the whole body. Legs go apart.
- Relax the whole body at once, and rest the head and the arm on the seat of the chair as in Makarasana or simply relax the arms forward and head resting on the chair.

2. Neck Muscle relaxation with chair support

- Neck movements (5 times)

  Slowly move the head forward adn backward relaxing the posterior neck muscles. You can either hold onto the edge of the chair or simply relax the arms forward with the head resting on the chair.



- Neck movements with breathing (5 times)

  Inhale as deeply and slowly as possible while moving the head backward and exhale while moving it forward-repeat 5 times.

- Neck movements with 'A-kara' (5 times)

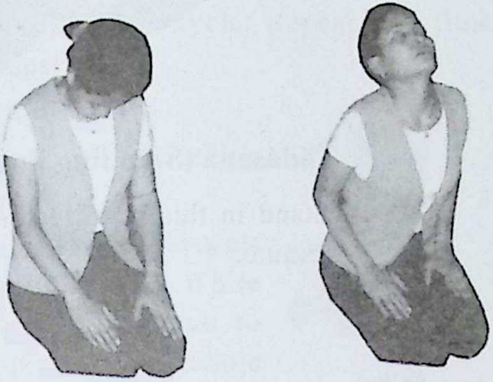
  Chant 'A-kara' in a low tone while bending the neck forward.

3. Neck movements in Vajrasana

(Sitting on heels without chair support):

- Neck movements only (5 times)

  Move the head forward and backward in a relaxed way.



- Neck movements with breathing (5 times)

  Inhale while moving the head backward and exhale while moving it forward
- Neck movements with 'U-kara' (5 times)
- Chant 'U-kara' in a low voice while bending the head forward.

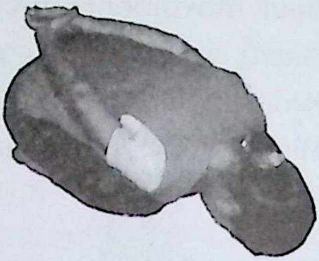
4. Śaśānkāsana

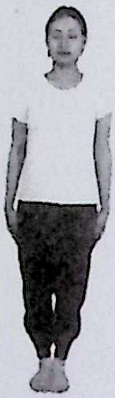
- Śaśankāsana movements only (5 times)

  Bend forward and backward from the waist region while sitting in vajrasana and holding the right wrist with the left behind the back.
- Śaśankāsana movement with breathing (5 times)

  Synchronize your breathing with the forward and backward movements of the neck. While inhaling bend backward and while exhaling bend forward.

- Śaśankāsana movements with M-kāra (5 times) Chant M-kar in a low voice while bending forward to Śaśankāsana.

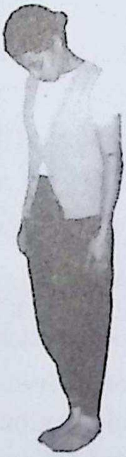




5. Tādāsana (Standing Posture)

- Stand in this posture for about a minute.

6. Neck Movements in Tāḍāsana

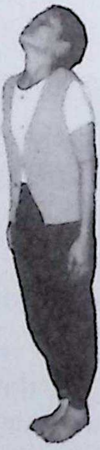


- Neck movements only (5 times)

  Move the head forward and backward slowly.
- Neck movement with breathing (5 times)

  Synchronize your breathing with neck movement.
- Neck movement with M-kara (5 times)

  Chant M-kar in a low voice while bending the head forward.

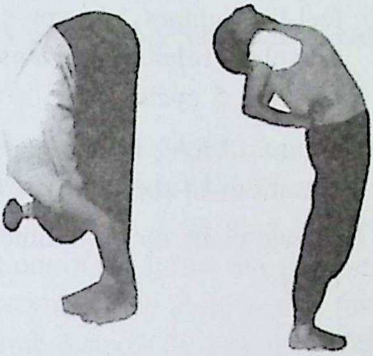


7. Ardha Cakrāsana - Pāda-Hastāsana

- Movements only (5 times)

  From Tādāsana move to Ardhacakrāsana slowly and then shift to Pādahastāsana allowing the hands to hang loosely down. This is one cycle. Repeat five times slowly and continuously.
- Return to Tādāsana.
- Movements with breathing (5 times)

  Synchronize the movements with the breathing. While inhaling go to move to Ardhacakrāsana and while exhaling move to Pādahastāsana.



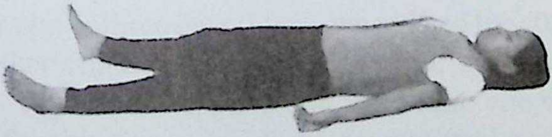
- Repeat the cycle five times.
- Movement with M-Kāra (5 times)

  Chant M-Kara in a low voice while bending forward to Pādahastāsana.

8. Quick Relaxation Technique (QRT)

Phase I

- Feel the abdominal movements.Observe the movements of abdominal muscles going up and down as you breathe in and out normally. Observe 5 cycles.



Phase II

- Synchronize the abdominal movements with deep breathing.The abdomen bulges up with inhalation and sinks down with exhalation. Observe 5 cycles.

Phase III

- As you inhale deeply and slowly, energize the body and feel the lightness. As you exhale completely collapse all the muscles, release the tension and enjoy the relaxation. Observe 5 cycles.
- Chant 'AAA' in a low pitch while exhaling. Feel the vibrations in the lower parts of the body.
- Slowly come up from either the right or the left side of the body.

Note

- Initially this Yoga Chair Breathing technique takes about 30 to 35 minutes. With practice the time required will about 20 minutes.
- During an attack of wheez this technique can be used instead of Bronchodilators. With this technique one can learn to overcome the bronchospasm effectively.

13

RESEARCH ON YOGA FOR ASTHMA - A REVIEW

Are there studies to show that psychological stresses can trigger asthma?

Negative emotions, worry, anxiety, sadness, anger and depression can all worsen the asthma in known asthmatics. Miller(1) and his friends (1994) wanted to study how emotions may trigger asthma? They recorded the functions of the autonomic nervous system by a test called heart rate variability and showed that emotions worsened the existing imbalances of the sympathetic and parasympathetic nervous system. It is known that asthmatics have para-sympathetic hyper-reactivity and sympathetic hypo-reactivity and they showed that this imbalance is worsened by the negative emotions. They also showed that happiness can relieve airway obstruction.

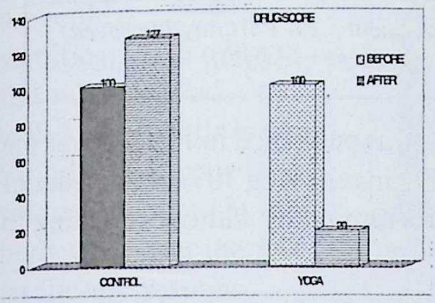
I had a lady asthmatic who lived in Bangalore. She came to me and said 'Dr. I have a peculiar type of asthma. Many of my asthmatic friends say that their asthma gets worse in winter or rainy season or with dust or smoke. But I have no such triggers. I just realized something unusual. My attacks show up generally in the first week of the month and I did not know why. Each time my attack becomes so severe that I need hospitalization, IV fluids,a course of steroids etc., and I will be back to work only after two or three days. Once, when I had the attack I went to my mother's house which is just across the road and my attack vanished. When this happened on more than one occasion, I analyzed the situation and realized that my attack was triggered by my anger followed by frustration. The reason for the anger is that when my husband gets his salary, we have arguments about how the amount has to be spent. I am always the loser. He has to have his last word . Heat builds up; I get irritated and end up screaming and the frustration ends up with an attack of asthma. Do you think my analysis is right? Are there people who have this type of triggers? What does medical science say about this? I want to know whether yoga can help me not to get lost in this type of my emotional surges and end up with an attack'.

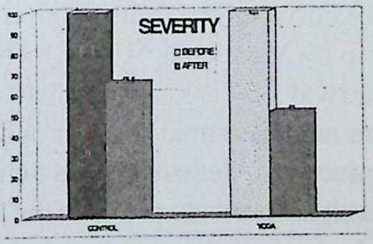
Reietveld et al⁽²⁾ studied four groups of children ;Gp (a) viewing an emotional film of 10 mm, gp(b) performing standard physical exercise, gp (c) combination of a+b and gp (d) combination of b+a. Group (c) where exercise was proceeded by the emotional film had the worst airway narrowing and breathlessness than only the exercise group who also had breathlessness. It is well known that either excessive panic (or insensitivity to the distress) can be very risky during the attack (lehrer⁽³⁾ 1998).

Is there scientific proof for the efficacy of yoga and relaxation therapies in asthma?

Alexander and his friends⁽⁴⁾ (1972) showed that systematic relaxation improves airway caliber. Wilson⁽⁵⁾ (1975) showed the efficacy of physiotherapy in asthma. Goyeche⁽⁶⁾⁽⁶ᵃ⁾ (1980-1982) reviewed the existing literature and explained that the integrated set of yoga practices that include yoga postures, correction of breathing pattern and muscle relaxation, help asthmatics by releasing suppressed emotions, reducing anxiety, and also by expectoration of mucus and developing self-conscious awareness.

We have consistently observed the beneficial effects of yoga in asthmatics through the integrated approach of yoga therapy. When we started our work in 1977 -78 in Kanyakumari with a ten bed facility we started understanding and developing suitable yoga modules for asthma based on the scriptures and improvised them based on the results of our observations on these residential patients. This gave us the pilot data and the confidence to go on to design well controlled studies for long term follow up. Then we shifted to Bangalore to carry on recruiting large number of subjects through non-residential yoga therapy camps. Patients would come to the center daily after their working hours and learn the techniques.In our very first yoga therapy camp in 1979 (125 mild, moderate and severe asthmatics) we noticed very encouraging results. Severe asthmatics who were on 8 to 10 tablets per day (including steroids), some requiring several doses of inhalers per day, some requiring hospitalization almost once a week, could learn these techniques and greatly benefit within two weeks. As we knew that asthma can be affected by positive emotions, we were not ready to conclude anything by this temporary excitement of two weeks. We made more rigorous design with matched controlled studies and followed them up systematically for 54 months. The results were now acceptable. Now there was enough convincing evidence that the set of IAYT (described in this book) could be accepted as beneficial to patients with asthma. There was reduction in medication by 80 %(non yoga group had increased by 10%).The severity and the frequency of attacks had reduced. Their airway caliber (as measured by peak flow meter) had improved significantly. When this work was published in the British Medical journal in 1985⁽⁷⁾ it created a great sensation; readers digest, the BBC, many new papers & popular magazines flashed this news around. Further in 1986 a follow up of 576 asthmatics was published in Journal of Asthma





from USA(8). Our cross cultural studies in USA amongst mild asthmatic students of Colorado state university was published by Dr Vedandatan(9) in 1998 which showed significant relaxation, positive attitude and tendency for lesser usage of inhalers.

Group	No. of Episodes	Initial PFR (1/min)	Time taken (min)
I	78	112.6 ***	29.8
PI	21	92.5*	92.5
NC	10	96.0 *	41.0
D	1	68.0	38.0
Pooled	110	106.8	32.1

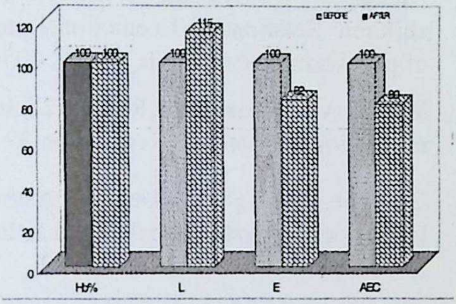
NS - Not Significant, I- Improvement , PI- Partially Improved, NC- No. Change, D- Deteriorated, ***$p < 0.001$, * $p < 0.05$.

Another interesting study that was published in 1991(10) was the efficacy of yoga chair breathing in relieving 70% of episodes of asthma within a mean time of 30minutes without resorting to inhalers.

Apart from our work, others like Dr Singh and his friends(11) (1990) from Punjab also showed the beneficial effects of yogic breathing.18 subjects with mild asthma had improved much better than the control group after 2 weeks of practice of yoga prāṇayama. They used a breathing device that simulates yogic prāṇayama with an inhalation, exhalation ratio of 1:2. and compared it with breathing through a placebo device. They also showed the beneficial effects of yogic vomiting in asthma.

The next question we need to address is- can yoga reduce the basic hyper-reactivity of the air passage? This question was taken up by Manocha(12) (2003) who tried to give a challenge to the airways by asking asthmatics to inhale methacholine in very minute measured doses through a nebulizer before and after yoga practices. Methacholine is a chemical challenge to the air passage as it is known to provoke the airway narrowing in asthmatics at much lesser concentrations than normal persons. Manocha showed that after yoga practices there was significantly higher concentration that these asthmatics could tolerate. A similar observation was made by our team (Sudharani-2001) (13) by using exercise(spot jogging) as a challenge instead of methacholine nebulization. The exercise lability of the air passages had reduced significantly after yoga after two weeks of intensive residential training. Future work should be able to answer - how does yoga help in asthma? And what are the mechanisms of action?

Looking at the changes in the immune system, we could demonstrate a significant reduction in the white blood cells called eosinophils in the blood. There are the soldiers recruited by teh body whenever there is an allergic response.



All these studies go to show that even the scientists of modern medical field are accepting that mind management is an important component in treating asthmatics. Although there are wonder drugs available today and just two puffs of inhalers a day could keep most asthmatics happy to manage their lives without much problems, scientists continue to search for newer insights and techniques. In this context yoga provides a totally different paradigm of understanding the problem of asthma; provides techniques to tackle the problem by a different approach. These evidences open up the doors to our understanding of the inner freedom that exists in man to master the response patterns at the physical level by manipulating the mind and vice versa.

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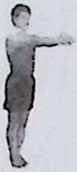
Integrated Yoga Module for ASTHMA

Steps	Pg.No.	Practice	Rounds	Duration
1 ➢		**Breathing Practices**		
	79	Hands In and Out breathing	5	1 min
	80	Hands stretch breathing	5	1 min
	82	Ankle stretch breathing	5	1 min
	83	Dog Breathing		1 min
	84	Rabbit Breathing		1 min
	85	Tiger Breathing		1 min
	86	Śaśāṅkāsana Breathing		1 min
	87	Straight Leg raise Breathing		1 min
2 ➢	88	**Instant Relaxation technique (IRT)**		2 min
3 ➢		**Loosening Exercises**		
	91	Forward and Backward Bending	50	1 min
	92	Side Bending	10	1 min
	93	Pavanamuktāsana Kriya	5	1 min
4 ➢	96	**Quick Relaxation Technique (QRT)**		4 min
5 ➢		**Yogāsana**		
	Standing			
	108	Ardhakati Cakrāsana		1 min
	109	Ardha Cakrāsana		1 min
	110	Pādahastāsana		1 min
	Stitting			
	111	Vajrāsana		1 min
	112	Vakrāsana		1 min
	113	Ardha Matsyendrāsana		1 min
	114	Pāścimottanāsana		1 min

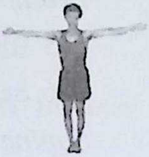
		Prone		
	115	Bhujaṅgāsana		1 min
	116	Śalabhāsana		1 min
		Supine		
	117	Sarvāṅgāsana		1 min
	118	Matsyāsana		1 min
	120	Halāsana		1 min
6 ➢	122	**Deep relaxation technique(D.R.T)**		7 min
7 ➢		**Prāṇāyāma**		
	130	Sūrya Anuloma Viloma Prāṇāyāma	20	1 min
	131	Candra Anuloma Viloma Prāṇāyāma	20	1 min
	132	Nādi Śuddhi Prāṇāyāma	10	1 min
	133	Śītalī/ Sītkāri/ Sadanta Prāṇāyāma	5	2 min
	136	Bhrāmari Prāṇāyāma	5	1 min
8 ➢		**Meditation**		
	139	Nādānusandhāna		8 min
	141	OM-Dhyāna (Meditation) /		10 min
	142	Cyclic Meditation		

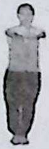
- Vamanadhouti + DRT - once a week
- Laghu Śankāprakṣaḷana+ DRT- Daily

INDEX

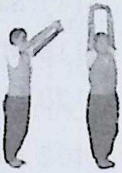


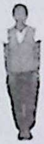
Hands In and Out Breathing
Pg no.79, 5 rds, 1min



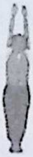


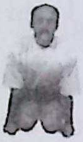
Hands Stretch Breathing
Pg no. 80, 5 rds, 2 ½ min



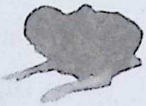


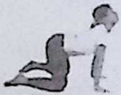
Ankle stretch breathing
Pg no.82, 5 rds, ½min





Dog Breathing
pg no. 83, 5x3 rds 1 min
Rabbit Breathing
pg no. 84, 5x3 rds 1 min





Tiger Breathing
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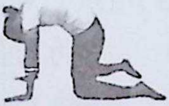

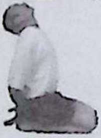

Śaśāṅkāsana Breathing
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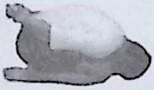
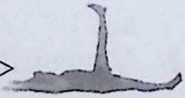
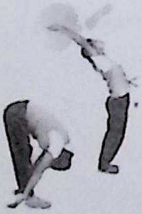


Straightleg raising
Pg no.87, 5 rds, 1 min





Forward & Backward bending
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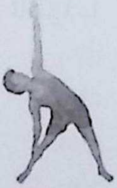
Side bending
Pg no.92, 5 rds, 1min



Pavanamuktāsana
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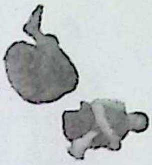
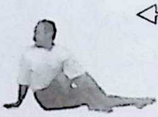


Ardhakati Cakrāsana
Pg no 108, 1+1rds, 2 min

Ardhakati Cakrāsana
Pg no 109+ 1 min

Pāda Hastāsana
Pg no 110, 1 +1rds, 2 min

Vajrāsana
Pg no 111, 1 min



Vakrāsana
Pg no112, 1+1rds, 1 min

Ardha Matsyendrāsana
Pg no 113, 1+1rds, 1 min

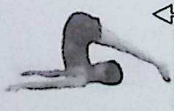
Paśćimottānāsana
pg no. 114, 5 rds, 1 min

Bhujañgāsana
Pg no 115, 1 min

Śalabhāsana
Pg no 116, ½ min

Sarvāṅgāsana
Pg no 117, 1 min

Matsyāsana
Pg no 118, ½ min



Halāsana
Pg no 120, 1 min

Deep Relaxation Technique
Pg no 122, ½ min

Sūrya Anuloma Viloma Prāṇāyāma Pg no 130, 1 min

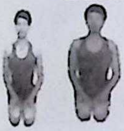
Candra Anuloma Viloma Prāṇāyāma Pg no 131, 5 rds, 3 min

Nādiśuddhi Prāṇāyāma Pg no 132, 1 min

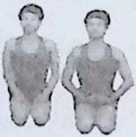
Bhrāmari Prāṇāyāma Pg no 134, 5 rds, 3 min

Śītalī, Sītkāri, Prāṇāyāma Pg no 134,135, 1 min

Sadanta Prāṇāyāma Pg no 135, 1 min



Nādānusandhāna Pg no 139, 13 min



Viparītakaraṇi Kriya Pg no 154, 1 min

Om Meditation Pg no 141, 13 min

Jalaneti Pg no 161, 13 min

Sūtraneti Pg no 162, 13 min

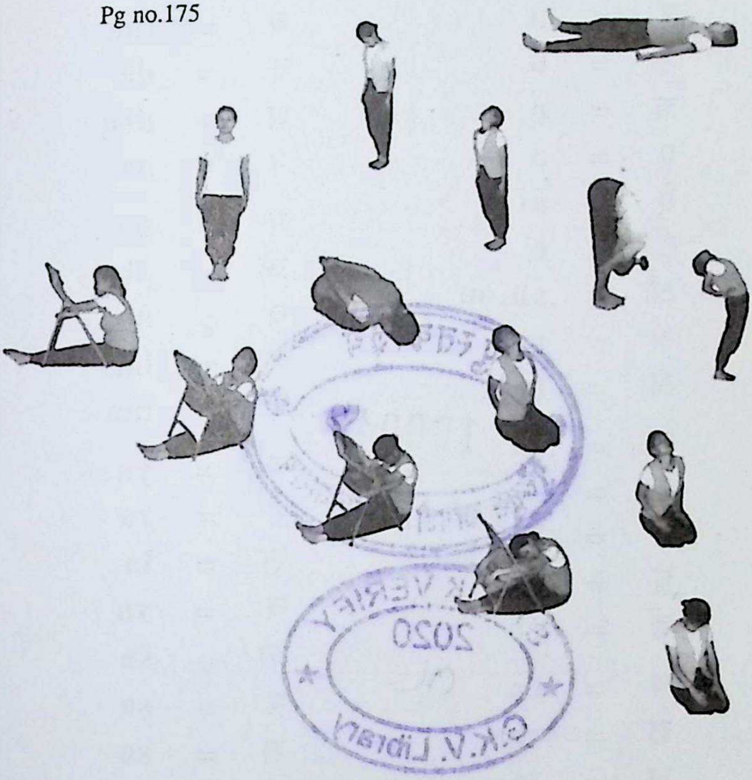
Vamanadhouti Pg no 163, 13 min

Vastradhouti Pg no 165, 13 min

Paścimottānāsana Pg no 165, 13 min

Chair Breathing

Pg no.175



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Standard International Transliteration Code (used to transliterate Sanskrit words in the text)

अ = a
आ = ā
इ = i
ई = ī
उ = u
ऊ = ū
ऋ = ṛ
ए = e
ऐ = ai
ओ = o
औ = au, ou
अं = ṃ
अ: = ḥ
क = ka
ख = kha
ग = ga
घ = gha
ङ = ṅa
च = ca
छ = cha
ज = ja
झ = jha
ञ = ña
ट = ṭa
ठ = ṭh

ड = ḍa
ढ = ḍha
ण = ṇa
त = ta
थ = tha
द = da
ध = dha
न = na
प = pa
फ = pha
ब = ba
भ = bha
म = ma
य = ya
र = ra
ल = la
व = va
श = śa
ष = ṣa
स = sa
ह = ha
क्ष = kṣa
= tra
= jña

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YOGA FOR ASTHMA

This book is one of the series on "Integrated Approach of Yoga Therapy for modern ailments" published by Swami Vivekananda Yoga Prakashana. The authors of this book are both scientists who have carried out systematic research and developed these integrated yoga therapy modules in tune with both the traditional yoga texts and the modern medical understanding of the ailments. Research by these authors since 1980 has validated the efficacy of these techniques through scientific observations published in Indexed Medical Journals.

VYASA has wide experience in healing asthmatics through yoga. Over a million asthmatics have been treated round the globe with consistent results. Long term (54 months) follow up data published in British Medical Journal and Journal of Asthma showed 80% reduction in need for medication with improved lung function and quality of life. Yoga trains asthmatics to overcome the hyper-reactivity of the nasal and air passages through the regular practice of asana, pranayama, meditation, and cleansing techniques apart from changes of life style.

The first part of this book gives the understanding of what, how and why of asthma based on the latest knowledge in modern medicine. The second part deals with the theoretical background of yoga therapy followed by the description of the practices.

The list for one hour daily practices and that for chair breathing during acute episode are given in Integrated Yoga Module for asthma.

SVYP
प्रज्ञानं ब्रह्म

Dr R Nagarathna, MBBS, MD, FRCP (Edin)
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130

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